

THE
GEORGE
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UNIVERSITY

CATALOGUE

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Summaries of Doctoral Dissertations 1959

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THE
GEORGE
WASHINGTON
UNIVERSITY

THE SUMMER SESSIONS
1959

WASHINGTON, D. C.

BY THE UNIVERSITY

THE SUMMER SESSIONS

1950

THE
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UNIVERSITY
BULLETIN

VOL. LVIII

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WASHINGTON, D. C.

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BY THE UNIVERSITY

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Vol. 11

THE SUMMER SESSIONS

WASHINGTON, D. C.

PUBLISHED IN 1907

BY THE UNIVERSITY

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CALENDAR OF THE 1959 SUMMER SESSIONS

Date	Day	Occasion
June 15	Monday	Registration for the eight-week term*
June 16	Tuesday	Classes begin
Aug. 7	Friday	Eight-week term ends
		Last day for receiving theses for the Master's degrees to be conferred in October
Sept. 4	Friday	Last day for receiving dissertations of candidates for the degrees of Doctor of Philosophy, Doctor of Education, and Doctor of Business Administration to be conferred in October

THE LAW SCHOOL

June 8	Monday	Registration for both sessions
June 9	Tuesday	First session classes begin
July 17	Friday	Last day of classes
July 18-21 ...	Saturday through Tuesday	First session examination period
July 22	Wednesday	Registration for students attending second session only
July 23	Thursday	Second session classes begin
Sept. 1	Tuesday	Last day of classes
Sept. 3-5	Thursday through Saturday	Second session examination period

THE SCHOOL OF EDUCATION—SPECIAL SESSIONS†

June 15	Monday	Registration and first day of classes of the presession and twelve-week evening session
July 3	Friday	Presession ends
July 6	Monday	Registration and first day of classes of the special six-week session
Aug. 14	Friday	Special six-week session ends
Aug. 17	Monday	Registration and first day of classes of the postsession
Sept. 4	Friday	Twelve-week evening session and postsession end

Registration for the academic year 1959-60 will be held September 17 and 18.

* For all schools and colleges offering courses in the Summer Sessions except the Law School and the School of Education.

† Registration and first day of classes of the second half of the twelve- and six-week sessions, July 27.

(vi) SECRETARY
OF THE UNIVERSITY

THE UNIVERSITY

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THE UNIVERSITY

HISTORY AND ORGANIZATION

The idea of a university in the Capital of the Nation was sponsored by George Washington, who during his public life urged the establishment of such an institution and who in his will left fifty shares of stock in the Potomac (Canal) Company for the endowment of a university to be established in the District of Columbia "to which the youth of fortune and talents from all parts thereof might be sent for the completion of their Education in all the branches of polite literature;—in arts and Sciences,—in acquiring knowledge in the principles of Politics & good Government".

Columbian College in the District of Columbia was chartered by an act of Congress of February 9, 1821. In 1873 the name was changed to "Columbian University" and in 1904 to "The George Washington University".

The George Washington University includes fourteen colleges, schools, and divisions, as follows:

The Junior College offers the work of the first two years of the four-year college program in the liberal arts and sciences and two years of preprofessional work. Each of these curricula leads to the degree of Associate in Arts. It also offers two-year terminal curricula. Those in Accounting and Secretarial Studies lead to the degree of Associate in Arts; those in Home Economics, Medical Technology—Basic Course, and Physical Science lead to the degree of Associate in Science.

Columbian College offers the work of the junior and senior years of the four-year college program in the liberal arts and sciences leading to the degrees of Bachelor of Arts and Bachelor of Science. It also offers the studies leading to the degrees of Master of Arts and Master of Science in the fields of the liberal arts and sciences.

The Graduate Council offers a program of advanced study and research leading to the degree of Doctor of Philosophy.

The School of Medicine offers work leading to the degree of Doctor of Medicine.

The Law School offers professional and graduate courses leading to the degrees of Bachelor of Laws, Juris Doctor, Master of Laws, Master of Comparative Law, and Doctor of Juridical Science.

The School of Engineering offers courses leading to the degrees of Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, Bachelor of Science in Engineering, Master of Engineering Administration, and Master of Science in Engineering.

The School of Pharmacy offers courses leading to the degrees of Bachelor of Science in Pharmacy and Master of Science in Pharmacy.

The School of Education offers undergraduate programs leading to the degrees of Bachelor of Arts in Education, Bachelor of Science in Home Economics, and Bachelor of Science in Physical Education, and graduate studies leading to the degrees of Master of Arts in Education and Doctor of Education.

The School of Government offers undergraduate programs of study in Foreign Affairs, Public Affairs, Accounting, Business Administration, and Business and Economic Statistics, leading to the degree of Bachelor of Arts in Government. Graduate work is offered leading to the following degrees: Master of Arts in Government in the fields of Foreign Affairs, Public Affairs, Economic Policy, Accounting, Business and Economic Statistics, Counseling, or Psychometrics; Master of Arts in Public Administration; Master of Arts in Personnel Administration; Master of Business Administration; and Doctor of Business Administration.

The College of General Studies includes the following divisions: the Off-Campus Division, the Campus Division, and the Division of Community Services. The college is designed for adults, and sponsors a program of credit and noncredit courses throughout the year.

The Division of University Students makes available courses for mature students not candidates for degrees in this University.

The Division of Special Students makes available courses for students in the process of qualifying for degree candidacy.

The Division of Air Science offers a program of Air Force ROTC training which is integrated with the curricula of the colleges and schools of the University and leads to appointment as a commissioned officer in the United States Air Force Reserve.

The Summer Sessions.

ACADEMIC STATUS

The George Washington University is accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools. This is important to students who wish to transfer credits from one institution to another.

The University is on the approved list of the American Association of University Women and is a member of the College Entrance Examination Board.

The Law School is a charter member of the Association of American Law Schools and is approved by the Section of Legal Education and Admissions to the Bar of the American Bar Association. The School of Medicine is a member of the Association of American Medical Colleges, and is one of the medical colleges which have been continuously approved by the American Medical Association. The School of Pharmacy

is accredited by the American Council on Pharmaceutical Education as a Class "A" school. It is a member of the American Association of Colleges of Pharmacy. The School of Engineering is on the accredited list of the Engineers' Council for Professional Development. The School of Education is a charter member of the American Association of Colleges for Teacher Education and is accredited by the National Council for the Accreditation for Teacher Education.

LOCATION

The George Washington University is in downtown Washington, four blocks west of the White House and east of the Potomac River with its extensive parkway. Readily accessible to the University are many of the departments of the Government, including the Department of State, the Department of the Treasury, the Department of Justice, the Department of the Army, the Department of the Navy, the Department of the Interior, the Department of Agriculture, the Department of Commerce, and the Department of Labor; as well as the National Archives, the Capitol, the Library of Congress, the National Academy of Sciences, the Pan American Union, the National Gallery of Art, and the Corcoran Gallery of Art.

EDUCATIONAL FACILITIES

Buildings, grounds, and equipment of the University are valued at approximately \$23,500,000. The buildings of the colleges, schools, and divisions offering Summer Sessions work are in the vicinity of Twenty-first and G Streets NW.

The University Library.—The University Library contains approximately 322,000 volumes and, with the exception of the law and medical collections, is housed in the Library Building.

Regulations governing the use of the library, the circulation of books, and the use of reserve books and periodicals are available at the service desks of the Library.

OTHER LIBRARY FACILITIES IN WASHINGTON

The student has access also to the Library of Congress, the Public Library of the District of Columbia and its branches, the Library of the Pan American Union, the Library of the Bureau of Railway Economics, the Library of the United States Department of Agriculture, the Library of the United States Office of Education, the National Library of Medicine, the Library of the Smithsonian Institution, and many other great special collections of the government departments.

RESEARCH FACILITIES OF WASHINGTON

The arrangement of the summer schedule of classes permits the full-time student to avail himself of the opportunity to study, at first hand, the working of the Federal Government and so to form a background for intelligent and useful citizenship.

In the departmental libraries of the Federal Government are a multitude of reports made by eminent specialists in all fields of science on the results of study and research in the bureaus, experimental stations, laboratories, museums, and observatories of the Nation.

In addition to the governmental collection the student has access to the research facilities of such scientific and educational groups, whose headquarters are situated in Washington, as the Carnegie Institution, the American Council on Education, the American Council of Learned Societies, the National Academy of Sciences, the National Research Council, the National Education Association, and the National Geographic Society.



THE
GEORGE WASHINGTON UNIVERSITY
INVITES YOU TO STUDY THIS SUMMER IN THE
NATION'S CAPITAL





The air-conditioned classrooms of the Hall of Government and James Monroe Hall are just a few minutes' walk from the Department of State, a few minutes' ride from the Library of Congress.



The beautiful Blue Ridge Mountains of Virginia and the famous Maryland beaches are only an hour's drive from the George Washington campus in the heart of the Nation's Capital.







The five-day academic week at The George Washington University leaves students time to visit the historic shrines of the Nation's Capital, to attend musical and dramatic events in the Carter Barron Amphitheater, and to participate in the Summer Sessions recreation programs.



You will never forget your summer of study at
the campus four blocks from the White House.



THE SUMMER SESSIONS

1959

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 Samuel Nathaniel Wrenn, Ph.D., *Professor of Chemistry*
 Helen Bates Yakobson, B.S., *Assistant Professor of Russian*

THE SUMMER SESSIONS

The work of the Summer Sessions has been planned to meet the needs of full- and part-time students.

During the summer of 1959, courses are offered in the Junior College, Columbian College (the senior college), the Law School, the School of Engineering, the School of Pharmacy, the School of Education, the School of Government, and the Division of Air Science.

ADMISSION

An applicant for admission must obtain from the Office of the Director of Admissions an application blank which he must fill out completely and return with the application fee of \$10 if applying as a degree candidate, \$5 if applying as a non-degree candidate. A recent photograph, with signature, of the applicant must be attached to the blank.

ENTRANCE REQUIREMENTS

The Student Seeking a Degree

An applicant from a secondary school must send the high school record form furnished by the University to his high school principal, with the request that the principal fill out the form and mail it direct to the Office of the Director of Admissions.

An applicant who has previously attended an institution of higher learning should request the registrar of that institution to mail direct to the Office of the Director of Admissions a transcript of his record. If he has attended more than one such institution he must request the registrar of each institution to send to the Office of the Director of Admissions a transcript of his record, *even though credits were not earned*, together with an honorable dismissal.

Entrance requirements are stated in this bulletin under the various colleges, schools, and divisions.

The Student Not Seeking a Degree

Students 21 years of age or over who are not interested in working for a degree in this University may be considered for admission to the Division of University Students to take courses for which they have adequate preparation, as evidenced by previous scholastic records.

Students under 21 years of age who meet the entrance requirements of the Junior College but who are not seeking degree candidacy at this

University may be admitted to the Division of University Students to pursue programs of study approved by the Dean.

In special instances, with the permission of the instructor, a person who has been admitted to the University may be registered as an auditor in a class without being required to take active part in the exercises or to pass examinations, but no academic credit will be allowed for such attendance. Students in good standing and matriculated for degrees in other institutions who wish to take certain courses in this University will be admitted to the Division of University Students for the summer only, to the extent that the facilities permit. In such cases transcripts of record are not required.

REGISTRATION

Before a student may register he must have satisfied the Office of Admissions that he is qualified to enter the University.

A student previously matriculated in the University but not in attendance during the term preceding this registration must file an application for readmission in advance of registration.

Registration for both sessions of the Law School summer term will be held June 8. *Summer students planning to take the New York Bar examination must register at this time for both sessions and complete both.* Students wishing to attend only one session may register on June 8 for the first or second session, or register on July 22 for the second session. Tuition fees will be payable by the session.

For registration, students should report to the Office of the Registrar, Building C, 2029 G Street NW., between 9:00 A.M. and 7:00 P.M., on the dates stated in the Calendar.

CHANGES IN PROGRAM OF STUDY

Changes in programs of study may be made only with the permission of the adviser or major professor and the dean or director of the college, school, or division concerned.

FEES AND FINANCIAL REGULATIONS

By authorization of the Board of Trustees, the following fees have been adopted:

TUITION FEES

For each semester hour† for which the student registers (except for work in the Law School, for courses in Departments of In-

* Registration for the Law School is conducted in Stockton Hall, 730 Twentieth Street NW.
† Payment of tuition for the Master's thesis entitles the candidate, during the academic year of registration, to the advice and direction of the member of the faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year may be granted without further tuition payment. The student must, however, be registered "in residence" during this period. If the preparation of the thesis extends beyond the second academic year, it must be registered for again, and tuition paid on the same basis as for a repeated course.

struction in the School of Engineering, for courses in the College of General Studies Off-Campus Division, for work toward a Master's degree in Engineering, and for work taken by a candidate for a Doctor's degree)	\$20.00
For each semester hour for which the student registers in the Law School	21.00
For each semester hour for which the student registers for courses in Departments of Instruction in the School of Engineering	22.00
For each semester hour for which the student registers in the Off-Campus Division of the College of General Studies	14.00
For the degree of Doctor of Philosophy, Doctor of Education, or Doctor of Business Administration:	
For work* leading to and including the Council Fellowship or General examination†	600.00
For work leading to and including the final examination†	600.00
For the degree of Doctor of Juridical Science:	
For work leading to and including the final examination†	600.00
For the degree of Master of Engineering Administration:	
For work leading to and including the Comprehensive Examination†	700.00
For the degree of Master of Science in Engineering:	
For work leading to and including the Comprehensive Examination†	800.00

ADDITIONAL COURSE FEES

In certain courses additional fees, such as laboratory and material fees, are charged as indicated in the course descriptions. These fees are due with the tuition fee for the course. Breakage of apparatus is charged against the individual student. When breakage is in excess of the normal amount provided for in the laboratory fee, the individual student will be required to pay such additional charges as are determined by the department concerned.

GRADUATION FEES

Wherein the degree of Associate in Arts or Associate in Science is granted	10.00
Wherein a degree other than the Associate in Arts or Associate in Science degree is granted	25.00
Wherein an Advanced Professional Certificate in Education is granted	25.00
FEE FOR BINDING MASTER'S THESIS	6.00
FEE FOR PRINTING SUMMARY OF DOCTORAL DISSERTATION	85.00

SPECIAL FEES

Application fee, charged each applicant for admission as a degree candidate, nonrefundable	10.00
Application fee, charged each applicant for admission as a non-degree candidate, nonrefundable	5.00
Scholastic-aptitude test fee (when required for admission)	3.00
Late-registration fee, charged each student who fails to register within the designated period	5.00
Change fee, charged each student for each change in program involving one course or more than one course	2.00
Withdrawal fee, charged each student who preregisters and withdraws prior to the regular registration	5.00
Service fee, charged each student for late payment of tuition (see "Payment of Fees")	2.00

* This fee does not cover the cost of tuition for undergraduate courses numbered 1 to 100.
 † When a limited schedule is carried which extends the time of completion of the program of study to more than one year, the proportionate part of the charge may be fixed by the Treasurer.

Reinstatement fee, charged each student who is reinstated after suspension for delinquency in fees.....	5.00
For each examination to qualify for advanced standing and for each special examination	5.00
Laboratory checkout fee, charged each student in chemistry and pharmacy courses who fails to check out of the laboratory by the time set by the instructor	3.00
Transcript fee, charged for each transcript of record after the first...	1.00

Registration in the University entitles each student to the following University privileges: (1) the issuance of one certified transcript of record, if and when desired; (2) the services of the Placement Office; (3) the use of the University library facilities, except as otherwise designated; (4) medical attention and hospital services described below. These privileges, with the exception of the issuance of transcripts, cease when the student withdraws or is dismissed from the University.

Medical and Hospital Services.—These services include: (1) three visits by the University physician or surgeon, office or residence (District of Columbia) in any one illness, exclusive of a specialist, surgical operation, laboratory, or X-ray examinations; (2) hospitalization, including board and nursing, in the University Hospital for not more than one week during any twelve-month period—the necessity to be determined by the Director of Health Administration. All additional hospital charges for operating room, laboratory, anesthetics, X-ray, medications, or any other special service must be paid by the student. The duration of hospitalization period (maximum, one week) is also to be determined by the Director of Health Administration.

This medical benefit does not apply to illness or disability incurred previous to the University term or prior to payment of tuition fees.

The student is allowed, if he so desires, to engage physicians and nurses of his own choice, but when he does so he will be responsible for the fees charged.

PAYMENT OF FEES

All fees are payable at the Office of the Cashier, 725 Twenty-first Street NW. No student is permitted to complete registration or to attend classes until all fees are paid. Fees for each session are due in advance at the time of registration.

An auditor pays all fees chargeable to the student registered for credit except the late-registration fee.

WITHDRAWALS AND REFUNDS

Registrations are for the session, and no refunds or rebates are allowed unless the registration is in advance and the course is dropped before the day of registration for the session involved.

A student who preregisters and withdraws prior to the date of regular registration will be charged a withdrawal fee of \$5.

In no case will tuition be refunded because of nonattendance upon classes.

Payments apply only to the session for which registration charges are incurred, and in no case will these payments be credited to another session or term.

Any student in chemistry or pharmacy who fails to check out of the laboratory on or before the date set by the instructor, unless excused by the instructor, will be charged a laboratory check-out fee of \$3. A student dropping a course before the end of the session must check out of the laboratory at the next scheduled laboratory period.

No permission to withdraw and no certificate for work done will be given a student who has not a clear financial record.

UNIVERSITY REGULATIONS

Students in the Summer Sessions are subject to, and are expected to familiarize themselves with, the University regulations as stated in the general catalogue.

Academic Credit.—The Summer Sessions are an integral part of the University. Academic credit for completed work will be given toward the appropriate degrees in the various colleges and schools of the University in accordance with their separate regulations and requirements.

Residence.—Summer Sessions work may be counted in residence but the candidate for a degree must satisfy the residence requirements of the school or college concerned as stated in the general catalogue.

Amount of Work.—No full-time student may take more than nine semester hours of work during the eight-week session; no employed student, more than six hours.

In the Law School the maximum amount of work that may be taken in both sessions by a full-time student is twelve semester hours; by an employed student, eight semester hours.

The right is reserved by the University to dismiss or exclude any student from the University, or from any class or classes, whenever, in the interest of the student or the University, the University Administration deems it advisable to do so.

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.

The University is not responsible for the loss of personal property in any University building. A "Lost and Found" Office is maintained in the Student Union.

Detailed information concerning curricula; admission; scholarship requirements of the individual colleges, schools, and divisions; and requirements for degrees may be obtained from the general catalogue, which is available on request at the Office of the Director of Admissions.

For information concerning the hours at which courses will be offered, consult the Schedule of Classes for the Summer Sessions which will be available in May at the office of the Registrar.

VETERANS EDUCATION

The George Washington University is approved to provide training for eligible persons under the provisions of Public Laws 346, 16, 550, 89, and 634. The University Office of Veterans Education, Building Q, 202 H Street NW., operates as a service bureau for such persons interested in studying at the University and acts in a liaison capacity between the University and the Veterans Administration.

Eligible persons are advised to consult this Office concerning the educational program of the University and the procedure for securing Veterans Administration educational benefits before applying to the Veterans Administration for certification. The Veterans Administration is on Constitution Avenue at Twentieth Street NW., Washington 25, D. C.

PUBLIC LAW 634

(War Orphans' Educational Assistance Act)

A child of a person who died of a disease or injury incurred or aggravated while on active duty in the Armed Forces during World War I, World War II, or the Korean Conflict may be eligible for educational assistance under this Act, if certain age requirements are met. In the case of a child who has not reached the age of majority, his guardian must make application for him to the Veterans Administration.

PUBLIC LAW 346

(World War II GI Bill)

The educational benefits for veterans under Public Law 346 terminated July 25, 1956, except as described below.

The Armed Forces Voluntary Recruitment Act of 1945 (Public Law 190) provided that persons enlisting or reenlisting in the Armed Forces between October 6, 1945, and October 5, 1946, may count the entire period of such enlistment or reenlistment as war service for purposes of GI Bill benefits. Such enlistees have four years from the date that enlistment ended to begin training and nine years from that separation date to complete training under this provision.

PUBLIC LAW 550

(Korean GI Bill)

In order to be eligible for the benefits under this Law, a veteran must have been in service between June 27, 1950 and January 31, 1955, and must no longer be on active duty.

At least thirty days prior to registration the veteran wishing to attend under this Law should apply to the Veterans Administration for a Certificate for Education and Training, for presentation to the University Office of Veterans Education at the time of registration. A photostatic copy of his DD214 must accompany the original application for certification.

PUBLIC LAWS 16 AND 894

(Vocational Rehabilitation)

Disabled veterans desiring vocational rehabilitation under either Law should apply to Veterans Administration for approval of their training objectives at least sixty days prior to registration.

STUDENT LIFE

SOCIAL AND RECREATIONAL PROGRAM OF THE UNIVERSITY

The summer social and recreational program includes regularly scheduled social, square, and folk dances on Lisner Terrace. For those who would like instruction and practice in dance, teaching sessions are provided. Get-acquainted teas and a carnival are also included in the program.

During the summer notices of the many recreational and social opportunities offered in the Capital will be posted on a bulletin board in the Student Union.

LIVING ACCOMMODATIONS

Admission to the University does not include a room reservation. A separate application for a room should be made well in advance. Forms for application, together with detailed information, may be obtained from the Director of Activities for Women, Woodhull House, 2033 G Street NW, or the Director of Activities for Men, Building Q, 2029 H Street NW.

Information concerning private rooming and boarding facilities near the University, for women students twenty-one years of age or older and for men students, may be obtained at the Housing Office, Lisner Auditorium. The reservation of rooms in private houses must be made by students.

All girls, except freshmen, under the age of twenty-one who are enrolled for six or more credit hours of academic work at the university and who are not living with their parents or relatives, may live outside the dormitory only with the permission and approval of the Director of Activities for Women, and upon receipt of written requests from parents. In no case will permission be granted for such girls to be domiciled outside the dormitories except with persons approved by the Director of Activities for Women.

Freshman girls may be domiciled outside the dormitory *only* with their parents or with immediate relatives with the written approval of their parents.

During the summer of 1958 the following residence halls will be open. Meals are served in the Student Union.

Women Students.—Dolly Madison Hall provides single rooms with bath at \$50 a month and double rooms at \$35 a month a person.

Men Students.—Welling Hall provides double rooms at \$30 a month a person.

John Quincy Adams Hall provides 69 double rooms, each with study alcove and bath. Rooms rent at \$37.50 a month a person.

RELIGIOUS LIFE

The University recognizes the contribution that religion makes to the life of its students and encourages them to participate in the various religious organizations of their own choice. Catholic, Jewish, and Protestant bodies sponsor these groups and form a link between the University and the religious community. The advisers of the religious organizations are available for counseling.

THE COLLEGES, SCHOOLS, AND DIVISIONS

THE COLLEGES, SCHOOLS, AND DIVISIONS

Information concerning specific requirements for degrees is omitted from this bulletin. For such information, the student is referred to the general catalogue.

THE JUNIOR COLLEGE

The Junior College includes the first two years of college work. Its curricula are intended to continue the studies of a general cultural nature begun in secondary school, and to lay a foundation for the more specialized work which is to follow.

The Junior College also provides the preprofessional work required for admission to the schools of Pharmacy, Education, and Government, and the first two years of the preprofessional work required for admission to the schools of Medicine and Law.

In addition it provides two-year terminal curricula in Accounting, Home Economics, Medical Technology—Basic Course, Physical Sciences, and Secretarial Studies.

THE DEGREES

The Junior College offers work leading to the degrees of Associate in Arts and Associate in Science.

ENTRANCE REQUIREMENTS

An acceptable certificate of graduation from an accredited secondary school is required. The acceptability of the certificate depends upon the student's character and the quality of his work.

COLUMBIAN COLLEGE

Columbian College, the senior college of liberal arts and sciences, comprises the work of the junior and senior years and the Master of Arts and Master of Science disciplines.

THE DEGREES

Columbian College offers work leading to the following degrees: Bachelor of Arts, Bachelor of Science, Master of Arts, and Master of Science. In cooperation with the School of Medicine, Columbian College offers work leading to the combined degrees of Bachelor of Arts and Doctor of Medicine.

UNDERGRADUATE MAJORS

Curricula leading to the degree of Bachelor of Arts are available in the following major fields:

American Thought and Civilization	Latin American Civilization
Art:	Mathematics
Art History and Theory, Drawing and Painting, Sculpture, and Commercial Art	Philosophy
Biology	Physics
Botany	Political Science
Chemistry	Psychology
Economics	Religion
English Literature	Sociology
French Literature	Spanish American Literature
Geography	Spanish Literature
Geology	Speech
Germanic Languages and Literatures	Speech
History	Dramatic Art
Journalism	Statistics
	Zoology

Curricula leading to the degree of Bachelor of Science are available in the following major fields:

Biology	Mathematics
Botany	Physics
Chemistry	Statistics
Geology	Zoology

GRADUATE FIELDS

Graduate work leading to the degree of Master of Arts or Master of Science is offered in the following fields:

American Literary and Cultural	Latin American Civilization
History	Mathematics
Anatomy	Pharmacology
Bacteriology	Philosophy
Biochemistry	Physics
Biology	Physiology
Botany	Political Science
Chemistry	Psychology
Chemotherapy	Religion
Economics	Religious Education
English and American Literature	Sociology
English Literature	Spanish American Literature
French Literature	Spanish Literature
Geography	Speech Correction
Geology	Statistics
Germanic Languages and Literatures	Zoology
History	

In addition, programs can be arranged in combined fields subject to the approval of the Committee on Studies.

ENTRANCE REQUIREMENTS

For the Bachelor's degrees, the degree of Associate in Arts or Associate in Science based on the appropriate curriculum in the Junior College, or the equivalent, is required. Scholarship requirements may be somewhat higher than those for graduation from the Junior College. For the Master's degrees, an approved Bachelor's degree from an accredited institution and a transcript of studies previously pursued, showing appropriate distribution of courses and a superior quality of work in the major field, are required.

THE GRADUATE COUNCIL

The Graduate Council offers work leading only to the degree of Doctor of Philosophy. Because the basis for work under the Graduate Council is primarily creative research, regular study in specific courses is considered quite incidental and is therefore not emphasized in connection with the curricula of the Summer Sessions. A student wishing to work under the disciplines of the Graduate Council will consult the Chairman of the Graduate Council for information concerning credentials and candidacy.

A pamphlet describing details of the Graduate Council program, together with a current list of fields of research offered by the Council, will be sent upon request to the Office of the Graduate Council.

THE LAW SCHOOL

The Law School offers work leading to the following degrees: Bachelor of Laws, Juris Doctor, Master of Laws, Master of Comparative Law, and Doctor of Juridical Science.

See "Registration," on page for provisions applicable to students who plan to take the New York Bar examination.

ENTRANCE REQUIREMENTS

For the Degree of Bachelor of Laws.—A Bachelor of Arts or equivalent degree awarded upon completion of a four-year course in an approved college or university is required. The baccalaureate record must be of satisfactory quality and must include an acceptable distribution of courses. An applicant will not be admitted who has been in attendance at another law school and who is ineligible to return to that school in good standing. From the applicants, a selection will be made by the Committee on Admissions.

The Juris Doctor degree is conferred as a recognition of completion with high rank of the full course, including experience in research and

legal authorship. A student does not register as a candidate for this degree until his last year in the Law School.

For the Degree of Master of Laws.—A Bachelor of Arts or equivalent degree from an approved college or university and a Bachelor of Laws or equivalent degree from a member school of the Association of American Law Schools are required. Candidates for admission must have attained a *B* average on all work done for the Bachelor of Laws degree except that, at the discretion of the Committee on Graduate Studies, applicants otherwise eligible may be admitted on proof of experience and attainment as an alternative.

For the Degree of Master of Comparative Law.—The following are required: (1) the successful completion of and graduation from a course in arts, philosophy, letters, or sciences, equivalent to graduation from a gymnasium, lycée, or lycee; and (2) graduation in law from a recognized foreign university where training was in Civil Law.

Doctor of Juridical Science.—The following are required: a Bachelor of Arts or equivalent degree from an approved college or university and a Bachelor of Laws or equivalent degree, earned with high rank, from a member school of the Association of American Law Schools, and outstanding capacity for scholarly work in the field of law.

Unclassified Students.—A person who is in good standing as a degree candidate in another law school which is a member of the Association of American Law Schools may, at the discretion of the Dean, be admitted as an unclassified student in order to earn credits for transfer to the other law school.

A person who is a member of the bar or a person, not a member of the bar, who is a graduate of a member school of the Association of American Law Schools may, at the discretion of the Dean, be admitted as an unclassified student.

Unclassified students participate in the work of the course and take examinations. Courses taken by unclassified students will not be credited toward degrees at this Law School.

Continuing Legal Education Students.—A simplified admission and registration procedure is provided for members of the bar desiring to register as continuing legal education students to take courses on a non-credit basis. Members of the bar desiring to register as degree candidates or as unclassified graduate students should file the regular application for admission form.

THE SCHOOL OF ENGINEERING

The School of Engineering offers courses leading to the degrees Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, Bachelor of Science in Engineering

Master of Science in Engineering, and Master of Engineering Administration.

ENTRANCE REQUIREMENTS

For the Bachelor's Degrees

Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, Bachelor of Science in Engineering.

An acceptable certificate of graduation from an accredited secondary school, or the satisfactory passing of College Entrance Board examinations in secondary school subjects selected with the approval of the Director of Admissions is required.

Nine and one-half of the fifteen units required for entrance must be distributed as follows: three in English, two in algebra, one in plane geometry, one-half in plane trigonometry, one in physics or chemistry, and two in one foreign language or history. A graduate of an approved high school who does not offer for admission the particular subjects required for the engineering curriculum, but who does present not less than fifteen acceptable units, may be admitted on condition, if such deficiency in the distribution of units does not exceed two units.

Advanced standing may be granted for work successfully completed at accredited institutions of higher learning. Credit will be assigned by the School of Engineering to the extent that the work taken at previous institutions meets the requirements for the degree sought at this University, and subject to the general University regulations concerning satisfactory subsequent work.

THE SCHOOL OF PHARMACY

The School of Pharmacy offers work leading to the degree of Bachelor of Science in Pharmacy.

ENTRANCE REQUIREMENTS

An Associate in Arts degree based on the curriculum in Pharmacy in the Junior College, or the equivalent, is required.

THE SCHOOL OF EDUCATION

The School of Education prepares teachers, counselors, and administrators for the higher ranges of educational service and offers opportunities to teachers of experience to extend their education. The schedule of courses is arranged to meet the needs of employed students as well as those able to devote full time to their studies. It offers both graduate and undergraduate work.

THE DEGREES

The School of Education offers work leading to the following degrees: Bachelor of Arts in Education, Bachelor of Science in Home Economics, Bachelor of Science in Physical Education, Master of Arts in Education, and Doctor of Education.

ENTRANCE REQUIREMENTS

For the Bachelor's Degrees.—The satisfactory completion of two years of approved college work, or graduation from an approved two-year normal school, or the equivalent, is required.

For the Master's Degree.—A Bachelor's degree from an accredited college, or the equivalent, and the approval of the Committee on Admission and Advanced Standing are required.

For the Advanced Professional Certificate.—The Bachelor of Arts degree in Education or the Bachelor of Science degree in Physical Education from the School of Education, or the equivalent from another institution of higher learning; a Master's degree, from an accredited institution of higher learning, at least two years of successful teaching experience, and a permanent teaching or administrative license are required.

For the Doctor's Degree.—A Master's degree from an accredited college, or the equivalent, and the approval of the Faculty of the School of Education are required.

THE SCHOOL OF GOVERNMENT

THE DEGREES

The School of Government offers work leading to the following degrees: (1) Bachelor of Arts in Government with a major in Foreign Affairs, Public Affairs, Accounting, Business Administration, or Business and Economic Statistics; (2) Master of Arts in Government with a major field in Foreign Affairs, Public Affairs, Economic Policy, Accounting, Business and Economic Statistics, Counseling, or Psychometrics; (3) Master of Arts in Public Administration; (4) Master of Arts in Personnel Administration; (5) Master of Business Administration; (6) Doctor of Business Administration.

ENTRANCE REQUIREMENTS

For the Bachelor's Degree

Bachelor of Arts in Government.—An Associate in Arts degree based on the Foreign Affairs, Public Affairs, Accounting, Business Administration, or Business and Economic Statistics curriculum in the Junior College, or the equivalent, and a quality-point index of 2.00 for the first two years' work are required.

For the Master's Degrees

A Bachelor's degree from an accredited college or university is required. A student from an unaccredited institution may be admitted at the discretion of the Committee on Admission and Advanced Standing, but will be required to take such extra work above the minimum requirements as may be prescribed.

Students admitted to candidacy must have attained a quality-point index of 3.00 (a *B* average) in their undergraduate major. An applicant whose scholastic average is below 3.00 in his major, or who lacks prerequisite courses, may be referred to the Division of Special Students to make up the deficiency.

Master of Arts in Government.—The applicant's undergraduate program must have included prerequisite courses, corresponding to an undergraduate major at this University, for the chosen field of graduate study.

Master of Arts in Public Administration.—An undergraduate major in a social science or equivalent work experience is required.

Master of Arts in Personnel Administration.—An undergraduate major in a social science or education, with the appropriate courses in psychology is required.

Master of Business Administration.—An acceptable undergraduate major in Business Administration, or the equivalent, is required. Applicants who are deficient in such course work may be admitted and will be required to make up deficiencies over and above the normal Master of Business Administration program.

For the Degree of Doctor of Business Administration

A Master's degree in Business Administration or a related field, or the equivalent, and proficiency in Statistics and Accounting to the satisfaction of the Committee on Doctoral Studies are required.

COLLEGE OF GENERAL STUDIES

The College of General Studies offers off-campus credit and noncredit courses in any field in which there is sufficient demand and for which instructional facilities can be made available. These courses will meet at the time and place most convenient for the students enrolled and may begin at any time of the year.

The College also provides degree-granting programs for mature persons whose background and experience is such that they should be matriculated in a college designed to meet individual needs.

The Division of Community Services consists of the George Wash-

ington University Reading Clinic and a program of popular noncredit courses, institutes, and lectures offered both on campus and off campus.

ENTRANCE REQUIREMENTS

Off-Campus Credit Courses.—A simplified procedure for admission and registration in off-campus courses is conducted at the first meeting of the class. Transcripts of previous academic work are not required. Registration is restricted to those whose qualifications would indicate that they are able to carry the course successfully. Admission to an off-campus course does not constitute admission to degree candidacy in the University.

Noncredit Courses.—In general, noncredit courses will be open to any individual interested in enrolling. When a noncredit course is organized at the request of some particular agency or group, admission may be restricted to the students recommended by the sponsoring organization. A limit on the size of classes may have to be imposed in order to maintain the quality of instruction.

THE DIVISION OF UNIVERSITY STUDENTS

The Division of University Students makes the work of the University in its several colleges and schools, accessible to students 21 years of age or over who are not working toward a degree in this University.

Candidates for degrees in other colleges and universities attending the Summer Sessions of the University are registered in the Division of University Students.

Students under 21 years of age who meet the entrance requirements of the Junior College but who are not seeking degree candidacy at this University may be admitted to the Division of University Students to pursue programs of study approved by the Dean.

Adequate preparation to undertake the desired courses is required.

THE DIVISION OF SPECIAL STUDENTS

This is a non degree-granting division of the University in which the Director of Admissions may authorize the placement of students in the process of making up entrance deficiencies to degree-granting colleges and schools of the University.

COURSES OF INSTRUCTION

EXPLANATION OF COURSE NUMBERS

First-group courses.—Courses numbered from 1 to 100 are planned for the student in the freshman or sophomore year. With the approval of the adviser and the dean, they may also be taken by a junior or senior. In certain instances, they may be taken by a graduate student to make up undergraduate deficiencies or as prerequisite to advanced courses, but they may not be credited toward a higher degree.

Second-group courses.—Courses numbered from 101 to 200 are planned for the student in the junior or senior year. They may be credited toward higher degrees only when registration for graduate credit has been approved at the beginning of the course by the dean responsible for the graduate work and by the officer of instruction, and when the completion of additional work has been certified by the officer of instruction.

Third-group courses.—Courses numbered from 201 to 300 are planned primarily for the graduate student. They are open, with the approval of the officer of instruction, to the qualified senior; they are not open to the Junior College student.

In the Law School, first-year courses are numbered from 100 to 200; second-year courses, from 201 to 300; third-year courses, from 301 to 400; and graduate courses, from 401 to 500.

INDICATION OF THE AMOUNT OF CREDIT

The number of hours of credit given for the satisfactory completion of a course is in most cases indicated in parentheses after the name of the course.

For information concerning the hours at which courses will be offered, consult the Schedule of Classes for the Summer Sessions which will be available in May at the office of the Registrar.

The University reserves the right to change or withdraw any of the courses of instruction listed.

ACCOUNTING

1 *Introductory Accounting* (3)

Basic principles underlying accounting records used by single proprietorships and partnerships, preparation of the work sheet and financial statements. Morning.

Kennedy

1-2 Introductory Accounting (3-3)

Benso

First half: basic principles underlying accounting records used by single proprietorships and partnerships; preparation of the work sheet and financial statements. *Second half:* basic principles underlying accounting records used by corporations; introduction to valuation and amortization problems, cost accounting, and analysis and interpretation of financial statements. Prerequisite to Accounting 2: Accounting 1 or permission of the instructor. Accounting 2 begins July 13. Evening.

101 Cost Accounting (3)

Ponti

Theory and purposes of industrial cost accounting; treatment of systems of cost control and determination; analysis and interpretation of cost data. Emphasis will be on job order cost accounting. Prerequisite: Accounting 1-2. Morning.

111 Financial Statement Analysis (3)

Kenned

Methods and techniques of preparing, analyzing, and interpreting financial statements for the guidance of operating executives, directors, stockholders, and creditors; influence of price level changes on accounting data; determination and interpretation of trends and ratios. Prerequisite: Accounting 1-2 or permission of the instructor. Morning.

132 Accounting Theory (3)

Kurt

Development of basic accounting principles and concepts with special reference to the current thought expressed by the American Institute of Certified Public Accountants and the American Accounting Association. Prerequisite: Accounting 1-2. Evening.

193 Business Budgeting (3)

Ponti

Principles, techniques, and procedures involved in the development, installation, and operation of a system of budgetary control to aid in the management of commercial and industrial organizations. Prerequisite: Accounting 1-2. Evening.

212 Managerial Accounting (3)

Kenned

A survey of internal accounting controls, commercial budgets, and cost accounting systems used by management in directing and controlling business. Prerequisite to Accounting 212: Accounting 211 or permission of the instructor. Evening.

275 Internal Control and Auditing (3)

Kurt

Internal accounting controls, review and appraisal of accounting systems and procedures, managerial policies with respect to their effectiveness and profitability. Emphasis on the use of internal control and auditing as an aid to management. Prerequisite: Accounting 171 or permission of the instructor. Evening.

299-300 Thesis (3-3)

The St

COURSES OFFERED IN SPECIAL PROGRAMS

In addition to the regular courses announced above, the University offers the following accounting course for students enrolled in special programs.

3 General Accounting (3)

Benson, Kurtz

For students in the Navy Graduate Comptrollership and Air Force Advanced Management programs only. Study of accounting systems used by single proprietorships and corporations, with emphasis on accounting theory, terminology, and the analysis and interpretation of accounting data.

ART**1 Art Appreciation (3)**

Kline

A consideration of the vocabulary, methods, and materials of creative expression in the fine arts. A study of the language and function of art in its various media, the development of styles, aesthetic principles, theories, and ideals in art through the ages. (Not intended for the art major.) Morning.

71 Introduction to the Arts in America (3)

Kline

A survey of architecture, sculpture, painting, and the minor arts in the 17th and 18th centuries. Evening.

108 Baroque Art in Italy (3)

Leite

The development of painting, sculpture, and architecture in the 16th and 17th centuries in Italy. Morning.

BIOLOGY**1-2 Survey in Biology (3-3)**

Bowman, Munson

Systematic study of the plant and animal kingdoms, with emphasis upon the interdependence of living things and their relations with their environments. Introduction to organic evolution, heredity, public health, and conservation. Material fee, \$7 for each half. Nine-week term. Biology 1 is not prerequisite to Biology 2. Biology 2 begins July 16 and ends August 14. Lectures, laboratories, and field trips—afternoon.

212 Research in Cytology (arr.)

Bowman

Individual problems for advanced students interested in this field. Hours and credits to be arranged.

99-300 Thesis (3-3)

Bowman

BOTANY**1 General Botany (3)**

Adams

Study of the structure, activities, and development of the flowering plant; survey of the different kinds of plants, their evolution, ecological relationships, economic significance, and principles of inheritance. Material fee, \$7. Lecture and laboratory—morning.

2 General Botany (3)

Adams

Continuation of Botany 1. May be taken concurrently with Botany 1. Material fee, \$7. Lecture and laboratory—morning.

- 105 *Field Botany* (3) Parker
Primarily for nonspecialists. Emphasis is on local flora. Prerequisite: Botany 1 or Biology 1, or permission of the instructor. Lecture, laboratory, and field trips—morning.
- 295 *Research* (arr.) The Staff
Hours, credits, and fees to be arranged.
- 299-300 *Thesis* (3-3) The Staff

BUSINESS AND PUBLIC ADMINISTRATION

BUSINESS ADMINISTRATION

- 101 *Business Organization and Combination* (3) Clayton
Simple and interrelated forms of business enterprise and their control by government. Morning.
- 102 *Business Management* (3) Towson
The management movement, organization of an enterprise, principles of management and their application to various departments of an enterprise. Afternoon.
- 105 *Personnel Management in Industry* (3) Towson
Organization and work of the personnel department, human relations in business. Evening.
- 138 *Investments* (3) Shaffner
Analysis of factors of investment credit with application to different types of investments, proper selection of investments for various classes of investors, regulation. Prerequisite: Accounting 1-2. Evening.
- 141 *Principles of Marketing* (3) Prestwich
A survey of marketing, giving particular attention to consumption, retailing, wholesaling, and sales management; the entire marketing structure and its relation to the total economy. Prerequisite: Economics 1-2. Afternoon.
- 153 *Principles of Personal Selling* (3) Prestwich
Basic principles that underlie personal selling and the practical application of these principles. Emphasis is given to the human factor. Career opportunities and the role of selling in our economy are also considered. Evening.
- 232 *Seminar in Business Finance* (3) Dockera
Research in advanced financial problems. Evening.
- 278 *The Dynamics of Business* (3) Clayton
An analysis of the structure of American business, including a study of trend and cyclical change in economic activity and their bearing upon governmental policy. Evening.
- 291 *Seminar in Business Management* (3) Dockera
Research on various phases of management, including business, industrial, and personnel management. Evening.

299-300 *Thesis (3-3)*
Evening.

The Staff

COURSES OFFERED IN SPECIAL PROGRAMS

In addition to the regular courses announced above, the University offers the following business administration courses for students enrolled in special programs.

191 *Business Reports and Analyses (3)* Turner
For students in the Navy Graduate Comptrollership program only.

268 *Management Engineering (3)* Hubben, Clewlow
For students in the Air Force Advanced Management program only. Analysis of the techniques for initiation and implementation of management engineering programs, with emphasis on organization and methods surveys, including the study of work measurement, work simplification, management audits, and other management improvement programs.

269 *Readings and Conferences in Controllershship (3)* Johnson
For students in the Navy Graduate Comptrollership program only.

275 *Human Relations in Business (3)* Johnson
For students in the Navy Graduate Comptrollership program only.

PUBLIC ADMINISTRATION

211 *Problems of Governmental Organization (3)* Obern
Theories and principles of organization; analysis of problem areas in administration, such as decentralization, staff-line, field headquarters, and executive-legislative relationships. Evening.

231 *Public Personnel Management (3)* Hubben
Basic principles; structure and organization of personnel offices; responsibilities; inter-agency relationships; personnel staffing, training, and work measurement. Evening.

241 *Human Relations in Governmental Administration (3)* Hubben
Factors involved in working with people in governmental institutions. Study and research in human problems in management; discussion of programs for improved human relationships. Evening.

297 *Seminar in Public Administration (3)* Obern
Advanced research on various phases of public administration including methods of policy formulation and control, the application of systems to management, administration problems of bureaucratic relationships. Evening.

299-300 *Thesis (3-3)*
Evening.

The Staff

COURSE OFFERED IN SPECIAL PROGRAM

In addition to the regular courses announced above, the University offers the following public administration course for students enrolled in the Air Force Advanced Management Program.

251 *Governmental Budgeting* (3)

The role of budgeting in management; the principles and practices of budgetary formulation and administration.

CHEMISTRY

11-12 *General Chemistry** (4-4)

Harkness, Schimelpfenig

Elementary course in general chemistry. Prerequisite: one year of high school algebra. Students with credit for one semester of general chemistry (college level) may enter Chemistry 12 on July 16. Laboratory fee, \$18 for each half. Nine-week term ending August 14. Morning.

21 *Qualitative Inorganic Analysis* (4)

Vincenzo

Theoretical and practical study of methods of separating and identifying the more common cations and anions using semi-micro techniques. Prerequisite: Chemistry 12. Laboratory fee, \$18. Eight-week term. Afternoon.

22 *Quantitative Inorganic Analysis I* (4)

Schmidt

Theory and practice of quantitative analysis by typical volumetric and gravimetric procedures. Prerequisite: Chemistry 21. Laboratory fee, \$18. Eight-week term. Afternoon.

151-152 *Organic Chemistry** (4-4)

Wrenn, _____

Chemistry of the compounds of carbon. Prerequisite†: Chemistry 21. Chemistry 151 laboratory fee, \$11; Chemistry 152 laboratory fee, \$11. Students who have credit for Chemistry 151 may enter Chemistry 152 on July 16. Nine-week term ending August 14. Morning.

295-96 *Research* (arr.)

The Staff

Research on problems approved by the Staff. Open to qualified students with advanced training. Laboratory fee, \$7.50 a semester hour. Hours and credits to be arranged.

299-300 *Thesis* (3-3)

The Staff

Laboratory fee, \$18 each half. Hours to be arranged.

ECONOMICS‡

1 *Principles of Economics‡* (3)

Burns, Skinner

Survey of the major economic principles, institutions, and problems in contemporary life. Morning and evening.

* Full year course; credit is not given until the second half of course is completed.

† This prerequisite may be waived in the case of the student who has earned a grade of C or better in Chemistry 12 within the past two years.

‡ Economics 1-2 is prerequisite to all other courses in Economics.

- 2 *Principles of Economics* (3) _____, Skinner
Continuation of Economics 1. Prerequisite: Economics 1. Morning and evening.
- 101 *Economic Analysis* (3) _____, Watson
Analysis of demand, supply, and commodity pricing; theory of national income determination; pricing of productive services; welfare economics. Morning.
- 121 *Money and Banking* (3) _____, Skinner
Theory of money, credit, and banking; commercial banking and the Federal Reserve System; other financial institutions; international aspects of money; current financial problems. Afternoon.
- 181 *International Economics* (3) _____
Survey of world economics, theories of international trade, analysis of international economic problems, and the international organizations. Evening.
- 213 *Economic Thought in the Twentieth Century* (3) Burns
Continuation of Economics 201-2. The principal trends in economic thought during the present century. Evening.
- 219 *Managerial Economics* (3) _____, Watson
Analysis of price, production, and inventory policies of business firms. Evening.
- 251 *Theories of Economic Development* (3) _____, Shenefield
Growth and change in economic activity, capital accumulation, innovations in technology and business organization. Evening.
- 99-300 *Thesis* (3-3) _____, The Staff

COURSE OFFERED IN SPECIAL PROGRAM

In addition to the regular courses announced above, the University offers the following economics course for students enrolled in the Navy Graduate Comptrollership program.

- 195 *Governmental and Industrial Economics* (3) _____, Watson
Survey of national income, the financial system, international economics, and public economic policy.

EDUCATION

PRE-SESSION

June 15 to July 3

- 109A *Learning and Teaching** (3) _____, McCauley
For the general student as well as the prospective teacher. Nature of learning based on the study of human growth and development and the observation of classroom situations. June 15 to 19: lecture—late
- * A workshop course requiring the full daytime attention of enrollees. Concurrent registration in another course scheduled in the morning or afternoon not permitted.

afternoon; small group discussions and field work—evening. June 2 to July 3: lecture and conference—morning; small group discussions and field work—afternoon.

- 117 *Elementary School Science** (3) St. Cy
Enrollment limited to 35 students. Materials and methods. Prerequisite: Education 109-10 and 121-22 or teaching experience. June 2 to 19: lecture—late afternoon; small group discussions and laboratory—evening. June 22 to July 3: lecture and conference—morning; small group discussions, laboratory, and field work—afternoon.

- 120 *Elementary School Arithmetic** (3) Bako
Content, methods, materials, and activities essential in the elementary school curriculum. Prerequisite: Education 109-10 and 121-22 or teaching experience. June 15 to 19: lecture—late afternoon; small group discussions—evening. June 22 to July 3: lecture and conference—morning; small group discussions and field work—afternoon.

- 219 *Elementary School Classroom Procedures**† (3) LaBe
Current classroom practices with particular emphasis on ways of planning, unit teaching, techniques in discipline, individual and group evaluation techniques, resources for learning, providing for individual differences. June 15 to 19: lecture—late afternoon; small group discussions and field work—evening. June 22 to July 3: lecture and conference—morning; small group discussions and field work—afternoon.

- 255 *Secondary Education**† (3) Ro
Current proposals for the improvement of secondary education. June 15 to 19: lecture—late afternoon; small group discussions and field work—evening. June 22 to July 3: lecture and conference—morning; small group discussions and field work—afternoon.

TWELVE-WEEK EVENING SESSION

First Half—June 15 to July 24

- 109B *Learning and Teaching*‡ (3) Bako
For the general student as well as the prospective teacher. Nature of learning based on the study of human growth and development and the observation of classroom situations. Field work to be arranged. Evening.

Second Half—July 27 to September 4

- 110B *Learning and Teaching*‡ (3) Detwilt
For the general student as well as the prospective teacher. Nature of teaching approached through the understanding of learning and the observation of classroom situations. Evening.

* A workshop course requiring the full daytime attention of enrollees. Concurrent registration for another course scheduled in the morning or afternoon not permitted.

† Prerequisite: adequate professional preparation.

‡ Enrollees fully employed may not register concurrently for another course.

SPECIAL SIX-WEEK SESSION

First Half—July 6 to July 24

- 110A *Learning and Teaching** (3) Baker
For the general student as well as the prospective teacher. Nature of teaching approached through the understanding of learning and the observation of classroom situations. Lecture and conference—morning; small group discussions and field work—afternoon.
- 113 *Elementary School Art** (3) Crump
Materials and methods. Prerequisite: Psychology 1 and 29 or teaching experience. Material fee, \$4.50. Lecture and conference—morning; laboratory and field work—afternoon.
- 207 *Curriculum Materials**† (3) St. Cyr.
For experienced teachers. Construction of courses of study, resource units, classroom teaching aids, and inexpensive materials; direct application to student's own situation. Lecture and conference—morning; small group discussions and field work—afternoon.
- 225 *Elementary School Reading**† (3) Coleman
Developmental and remedial approaches to reading problems. Demonstrations of diagnostic and corrective techniques used in the Reading Clinic. Lecture and conference—morning; small group discussions and field work—afternoon.
- 241 *Education of the Gifted**† (3) Jenkins
Nature and discovery of giftedness; provisions for the gifted in regular classes; experimental projects. Lecture and conference—morning; small group discussions and field work—afternoon.
- 256 *Secondary Education**† (3) Root
Current problems in each of the subject-matter fields. Lecture and conference—morning; small group discussions and field work—afternoon.

Second Half—July 27 to August 14

- 115 *Teaching of Reading in the Elementary School** (3) Huse
A basic course in methods, techniques, materials, and activities essential in a good elementary school reading program. Prerequisite: Education 109-10 and 121-22 or teaching experience. Lecture and conference—morning; small group discussions and field work—afternoon.
- 121 *Society and the School** (3) St. Cyr
Historical and sociological developments as related to local, national, and international roles of education; cooperation of the school with other community agencies. Lecture and conference—morning; small group discussions and field work—afternoon.

* A workshop course requiring the full daytime attention of enrollees. Concurrent registration or another course scheduled in the morning or afternoon not permitted.

† Prerequisite: adequate professional preparation.

- 128 *Children's Literature** (3) Wilson
Exploring and evaluating the newer books for children and the children's classics, understanding the contribution of literature in child development, appreciating children's original expressions. Prerequisite: Psychology 1 and 29 or teaching experience. Lecture and conference—morning; small group discussions and field work—afternoon.
- 229 *Administration of Elementary Education** † (3) Tyle
Administration as a means of achieving instructional objectives, organizing learning and teaching activities, handling supplies and equipment, maintaining the building, and integrating school and community life. Emphasis upon guide lines to action. Lecture and conference—morning; small group discussions and field work—afternoon.
- 231 *Secondary School Classroom Procedures** † (3) Giancaspr
Survey of current classroom practices with particular attention to selected topics such as teacher-pupil planning, group procedures, pupil security, initiatory and culminating activities, individual and group evaluation techniques, teaching aids, etc.; review of recent literature. Lecture and conference—morning; small group discussions and field work—afternoon.
- 243 *Human Relations in the Classroom** † (3) Marinacci
Principles and practices involved in interpersonal relationships between learner and teacher and among learners. Lecture and conference—morning; small group discussions and field work—afternoon.

Full Period—July 6 to August 14

- 210 *Adolescent Growth and Development*† (3) McCauley
A consideration of physical, intellectual, and cultural backgrounds of adolescence with particular emphasis on social development, adjustment to organized society, educational development and adjustment to school and home relationships. Morning.
- 212 *Educational Measurements*† (3) McCauley
Basic measurement techniques; construction, selection, administration and interpretation of objectives and essay-type examinations; statistical analysis of test results; laboratory experiences in the use of test instruments. Afternoon.
- 216 *Education of Slow-learning Children*† (3) LaB
Identification, nature, and needs of slow-learning elementary and junior high school children. Emphasis on diagnosis and treatment of learning difficulties. Afternoon.
- 217 *Contemporary Problems in Education*† (3) Jarman
Designed to help students formulate a personal philosophy of education.

* A workshop course requiring the full daytime attention of enrollees. Concurrent registration for another course scheduled in the morning or afternoon not permitted.

† Prerequisite: adequate professional preparation.

- 233 *Audio-visual Education*^{†‡} (3) J. Johnson
Role of audio-visual materials in learning; selection, evaluation, and use of materials; administrative problems in the care, operation, maintenance, and use of audio-visual materials and equipment. Material fee, \$7. Evening.
- 251 *Guidance in Secondary Schools*[†] (3) Brougher
Scope; needs; organization of the program; services to students, the instructional staff, and the administration; personnel needed for the program. Morning.
- 272 *The Teacher and School Supervision*[†] (3) Fox
Nature, organization, human relationships, and techniques. Morning.
- 276 *Public Relations in School Administration*^{†‡} (3) Joy
Purposes, gathering materials, disseminating agencies, publicity media, public participation in policy making. Evening.
- 279 *Adult Education*^{†‡} (3) Detwiler
Current concepts and objectives, agencies involved, programs on all levels—international through community. Evening.
- 285 *Extra-classroom Activities*^{*†} (3) Suber
Nature and purposes of selected activities—homeroom, clubs, assemblies, school publications, student council, interscholastic contests; particular attention to sponsorship, participation, finance, and evaluation. Evening.
- 295 *Educational Research Methods and Procedures* LaBue
(3)
Required of all Master of Arts candidates following Plan 2. Knowledge of elementary statistics required. Afternoon.
- 297 *Reading in Education* The Staff
Afternoon. To assist those preparing for the comprehensive examinations. No credit toward degree requirements. Tuition fee, \$20. Afternoon.

POST-SESSION

August 17 to September 4

- 122 *Society and the School*^{*} (3) Angel
For the general student as well as the prospective teacher. Organization and operation of schools; principles and functions; role of the teacher. Lecture and conference—morning; small group discussions and field work—afternoon.

* A workshop course requiring the full daytime attention of enrollees. Concurrent registration for another course scheduled in the morning or afternoon not permitted.

† Prerequisite: adequate professional preparation.

‡ Enrollees fully employed may not register concurrently for another course.

- 281 *Group Procedures in Education** † (3) Detwiler
Theory, practice, evaluation, and application to all educational levels.
Lecture and conference—morning; small group discussions and field
work—afternoon.

ENGINEERING

CIVIL ENGINEERING

- 24 *Strength of Materials* (3) Arkilic
Development and application of principles necessary to analyze stresses
in and deformation of simple machine and structural components, com-
bined stresses, strain energy, buckling of columns and beams, design
of simple members and joints, composite members. Prerequisite: Civil
Engineering 21 *Statics* or the equivalent; Mathematics 20, *Integral
Calculus*. Evening.

MECHANICAL ENGINEERING

- 6 *Engineering Problems*‡ (2) Morgan
Simple engineering problems in statics, dynamics, energy, heat, and
electricity. Training in reasoning, engineering analysis, and applica-
tion of mathematics to engineering problems. Prerequisite: Mechan-
ical Engineering 5 *Orientation and Engineering Problems* or the equiv-
alent; removal of all entrance deficiencies in science or mathematics.
Evening.

ENGINEERING ADMINISTRATION

- 191 *Engineering Law*§ (3) Tiller
The influence of contract, property, and tort law upon engineering ac-
tivities. Legal principles relating to the organization and management
of engineering companies and governmental departments, local pro-
cedures of interest to engineers. Topics considered include contract
agency, partnership, corporation, liens, and expert testimony. Evening.
- 201 *Engineering Administration I* (3) Tiller
Application of scientific method to the administrative processes of (1)
planning and (2) organizing; including development of objectives, key
factors in planning, basics of organization, stages of organizational
growth, special problems of organization in an engineering or sci-
entific enterprise, and management development. Evening.
- 202 *Engineering Administration II* (3) Tiller
Continuation of Engineering Administration 201. Application of sci-
entific method to the administrative processes of (3) managing or direct-
ing and (4) evaluation and control. Study of delegation; decentraliza-
tion; personnel relations; systems engineering; automation; financial
analysis, budgeting, and administrative audits. Evening.

* A workshop course requiring the full daytime attention of enrollees. Concurrent registration
for another course scheduled in the morning or afternoon not permitted.

† Prerequisite: adequate professional preparation.

‡ This course should be completed before the beginning of the sophomore year.

§ An undergraduate course which may be taken for graduate credit with approval of the Com-
mittee on Graduate Studies.

- 291 *Master's Problem* (3) Wilson
Experimentation and proof of the Master's Problem solution. Preparation for presentation of the problem in written form. Evening.

ENGLISH

ENGLISH COMPOSITION*

- A *English Practice* (3) Moore and Staff
Instruction, drill, and exercises in grammar, vocabulary, spelling, and mechanics in general; instruction and exercises in composition and reading. This course is designed to prepare students for English 1. Morning and evening.
- B *English for Foreign Students* (3) Allee
A course in reading and writing designed to prepare the student for English 1. Special attention is given to spelling, syntax, grammar, idiom, and vocabulary. Evening.
- 1 *English Composition** (3) Moore and Staff
Review of grammar, exercises in composition, readings. Morning and evening.
- 2 *English Composition** (3) Moore and Staff
Continuation of English 1. Morning and evening.
- 4 *English Composition** (3) Moore and Staff
A course in critical analysis and practice of expository and argumentative techniques and in research procedure. This is the second half of the six-hour composition course required of students in the pre-Columbian College curricula. Prerequisite: English 1 and both halves of an introductory literature course. Morning.
- 11 *The Writing of Reports* (3) Turner and Staff
Theory and practice in the writing of technical reports. Evening.

ENGLISH LITERATURE†

- 51 *Introduction to English Literature* (3) Shepard and Staff
A historical survey. From beginnings to 1800. Morning and evening.

* Before students are registered in English 1, they are tested in the minimum essentials of vocabulary, spelling, grammar, standard usage, and writing skill. Those students who show marked superiority may, upon passing further tests, be exempted from one or both halves of the English Composition course; those who are inadequately prepared for English 1 will be assigned English A.

† All pre-Columbian College students (who are required to take one year of English composition and one year of literature in English, Classical Languages, French, German, or Spanish) will follow the sequence of English 1, both halves of one of the introductory literature courses, and following the pre-Columbian College curriculum.

English 1 is prerequisite to all other courses in English.

English 51-52, 71-72, 91-92, Classical Languages and Literatures 71-72, French 51-52, German 51-52, or Spanish 51-52 is prerequisite to all second-group courses except English 125.

- 52 *Introduction to English Literature* (3) Shepard and St
A historical survey. Literature since 1800. Morning and evening.
- 136 *Shakespeare* (3) Tup
The tragedies. Evening.
- 139 *The Seventeenth Century* (3) Tup
Poetry and prose from 1603 to 1660. Evening.
- 152 *The Romantic Movement* (3) Lin
The later romantics. Morning.
- 166 *The Twentieth Century* (3) Lin
Fiction and drama since 1900. Morning.
- 225 *Applied Linguistics* (3) A
Survey of the English language since 1850; introduction to analytical
methods of structural linguistics and their applications to modern
American and British writing and to secondary school teaching
English. Evening.

AMERICAN LITERATURE*

- 71 *Introduction to American Literature* (3) Cole and S
A historical survey. From beginnings to 1860. Morning and evening.
- 72 *Introduction to American Literature* (3) Cole and S
A historical survey. Literature since 1860. Morning and evening.
- 170 *The American Short Story* (3) Cob
The historical development of the short story in America. Evening.
- 176 *American Drama* (3)
Critical study of 20th century drama. Morning.

GEOGRAPHY

- 51 *Introduction to Geography* (3) Western
A study of place attributes and characteristics; patterns and associations
of physical and cultural earth features. Morning.
- 52 *World Regions* (3) Mur
The analysis of world regional divisions; description and interpretation
of physical-cultural complexes; evaluation of regional differences
they affect the distribution and activities of man. Morning.
- 171 *Field Geography* (3) Western
Field study methods, training in mapping and analysis techniques
both rural and urban areas. Prerequisite: Geography 51 and
Transportation fee, \$18. Morning and afternoon.
- 223 *Seminar: Place and Culture* (3) Mur
A study of the culture traits which characterize various ethnic groups
and differentiate people—place associations. Evening.

* See footnote (†) on page 47.

GERMAN

- 1-2 *First-year German* (3-3) Rogers, King
The essentials of German grammar, translation of easy prose. Full-year course: credit is not given for German 1 until German 2 is completed. Second half begins July 13. Morning and evening.
- 3-4 *Second-year German* (3-3) The Staff
Selections from modern German prose, review of grammar. Full-year course: credit is not given for German 3 until German 4 is completed. Prerequisite: German 1-2 or two years of high school German. Second half begins July 13. Morning and evening.
- 49 *German Readings for Nonmajor Students* (3) Legner
Designed primarily for graduate students preparing for reading examinations. Undergraduates admitted with the permission of the instructor. No academic credit for graduate students. June 15 to July 13. Evening.

HISTORY*

- 39 *The Development of European Civilization* (3) Kayser
Primarily for freshmen. The political, social, economic, and cultural history of the Old World from ancient times to 1715. Morning.
- 40 *The Development of European Civilization* (3) Thompson
Primarily for freshmen. The political, social, economic, and cultural history of the Old World from 1715 to the present. Evening.
- 71 *The Development of the Civilization of the United States* (3) _____
Primarily for sophomores. The political, social, economic, and cultural forces of the United States in their world setting from 1492 to 1865. Morning.
- 72 *The Development of the Civilization of the United States* (3) _____
Primarily for sophomores. The political, social, economic, and cultural forces of the United States in their world setting from 1865 to the present. Evening.
- 130 *Nationalism* (3) Kayser
The historical evolution of modern Nationalism. Morning.
- 144 *Modern Germany* (3) Thompson
German politics and culture as a driving force in the modern world, 1740-1945. Morning.
- 166 *Mexico and the Caribbean since Independence* (3) Davis
A survey of the republics of Mexico, Central America, and the Caribbean islands. Evening.

*History 19-40 is prerequisite to courses 100 through 142 and 190 through 196; History 41, to courses 171 through 184, either History 39-40 or 71-72, to courses 161 through 166

- 171 *Social History of the United States* (3) Gr
Daily life, institutions, intellectual and artistic achievements of the Agrarian Era, 1607-1861. Morning.
- 173 *Representative Americans* (3) Gr
A biographical approach to national history. Some fifty significant pivotal personalities in the development of the United States in government, business, science, religion, journalism, the arts, and social reform. Morning.
- 181 *Diplomatic History of the United States to 1898* (3) Merrim
Tendencies toward isolation, expansion, and collectivism; disputes with foreign countries and their settlement; and the activities of American secretaries of state and diplomatic agents. Morning.
- 182 *Diplomatic History of the United States since 1898* (3) Merrim
Tendencies toward isolation, expansion, and collectivism; disputes with foreign countries and their settlement; and the activities of American secretaries of state and diplomatic agents. Morning.
- 183 *Oversea Expansion of the United States* (3) Merrim
The political, economic, social, and cultural life of our outlying possessions. Evening.
- 199-200 *Proseminar: Readings for the History Major* (3-3) The S
Limited to majors in History. Hours to be arranged.
- 291-92 *Seminar* (3-3) The S
Prerequisite: approval of the Department. Hours to be arranged.
- 299-300 *Thesis* (3-3) The S
Required of all candidates for the Master's degree specializing in history. Hours to be arranged.

LAW

FIRST SESSION

June 9 to July 21

- 115 *Contracts I* (4) M
Mutual assent, offer and acceptance, consideration, parol evidence Statute of Frauds, third party beneficiaries, assignments, conditions. Evening.
- 135 *Legal Method and Legal System* (4) F
Introduction to substantive and procedural law dealing with legal concepts; training in method and technique of case law and legal writing; importance of language in law; legal reasoning and

of precedents under doctrines of stare decisis, law of the case, and res judicata; development of Anglo-American legal system; organization of judiciary and bar, stressing enforcement of ethical standards. Evening.

145 *Personal Property* (2) Mallison

Concepts of property, including interests created by bailments, liens, and pledges; methods of acquiring ownership. Morning.

215 *Civil Procedure* (4) Walburn

Pleadings, discovery, joinder, forms of trial and related proof problems. Emphasis is on Federal Rules of Civil Procedure and other modern codes. Morning and evening.

251 *Insurance* (2) Mallison

The insurance device in life, property, and other risks. Morning.

279 *Taxation—Federal Income* (4) Hambrick

A study of the federal income tax, including construction of statutes, practice and procedure, and legislative policy. Evening.

309 *Conflict of Laws* (4) Dixon

Study of cases involving foreign elements; principles of jurisdiction and limitations upon its exercise; procedure, torts, workmen's compensation, contracts, property, family law, administration of estates, business associations. Morning.

318 *Creditors' Rights* (4)

Remedies of unsecured creditors; judgments, fraudulent conveyances, creditors' agreements, equity and statutory receiverships, and bankruptcy. The general approach is that of law administration. Evening.

355 *Mortgages* (2)

Security interests in real property, their creation, transfer, enforcement, and extinguishment. Evening.

380 *Suretyship* (2)

The law of suretyship, especially in the context of accommodation credit and commercial and financial practices, with attention also to informal and nonconsensual suretyship relations and the place of suretyship principles in the solution of legal problems generally. Evening.

SECOND SESSION

July 23 to September 5

100 *Agency* (2)

Master and servant (status of agent), respondeat superior, nature of agency relation, actual authority, parties (disclosed and undisclosed principal), unauthorized transactions, notice, notification. Evening.

116 *Contracts II* (2)

Scope of protection afforded contracts; specific performance of contracts other than land transactions. Evening.

- 125 *Criminal Law and Procedure* (4) Coop
Origin and purposes of criminal law; elements of criminal liability; mental disorders; solicitation, attempt, and conspiracy; crimes against the person, against property, and against both; statutory offenses; criminal procedure, with consideration of Federal Rules of Criminal Procedure. Evening.
- 150 *Real Property* (2) Bens
Historical background of estates and conveyances, possessory estates, concurrent estates. Evening.
- 202 *Administrative Law* (4) Davis
The position of the administrative process in the separation of powers; including the status of administrative personnel, administrative hearings, judicial scrutiny of administrative action, discretion, and rule making—particularly as relating to federal administrative agencies. Evening.
- 210 *Business Associations* (4) Weav
Contrast of the partnership and corporation as alternative forms of organization; organizing partnerships and corporations—formality, capital contributions, share structure; problems of operation; relations between partners; roles of shareholders, directors, officers; control; vicissitudes; distributions to owners; voluntary reorganization; dissolution and termination. Morning.
- 219 *Commercial Paper* (4) Ledal
Bills of exchange, promissory notes and checks, especially under the Negotiable Instruments Law. Evening.
- 230 *Conveyances* (2) Bens
Land contracts, conveyances, recording; easements, profits, covenants, and equitable servitudes; adverse possession and adverse user. Morning.
- 235 *Domestic Relations* (2)
Marriage, annulment, and divorce; adoption and custody of children; economic relations. Morning.
- 240 *Evidence* (4) West
Functions of court and jury; qualification and examination of witnesses; opinion, relevancy, and scientific evidence; proof of written statements; application of the hearsay rule. Morning and evening.
- 265 *Legal Accounting* (2)
A study of elementary accounting principles and techniques; application of accounting principles to legal problems. Evening.
- 376 *Restitution* (2)
Remedies at law and in equity for restitution of benefits conferred, especially as based on the concept of unjust enrichment. Morning.

MATHEMATICS

- 3 *College Algebra* (3) The St
Prerequisite: one year each of high school algebra and high school geometry. Morning and evening.

- 6 *Plane Trigonometry* (3) The Staff
Prerequisite: two years of high school algebra and one year of high school geometry, or Mathematics 3. Morning and evening.
- 12 *Analytic Geometry* (3) The Staff
Prerequisite: Mathematics 6, or two years of high school algebra, one year of high school geometry, and one-half year of high school trigonometry. Morning and evening.
- 20 *Integral Calculus* (3) The Staff
Prerequisite: Mathematics 19. Morning and evening.
- 29 *Calculus I* (3) The Staff
Differentiation and integration of polynomial functions, with applications. Prerequisite or concurrent registration: Mathematics 12. Morning and evening.
- 103 *Calculus and Differential Equations* (3) The Staff
Prerequisite: Mathematics 20. Morning.
- 112 *Mathematics for Engineers and Scientists* (3) The Staff
Topics from advanced calculus, partial differential equations, vector analysis, and complex variables. Prerequisite: Mathematics 103 or 132. Evening.
- 132 *Differential Equations* (3) The Staff
Prerequisite: Mathematics 20. Evening.
- 139 *Advanced Calculus* (3) The Staff
Prerequisite: Mathematics 20. Evening.
- 299-300 *Thesis* (3-3) The Staff

PHARMACY

- 192 *Hospital Pharmacy: Prescription Practice* (1) Cooper
Prescription practice in the University Hospital Pharmacy. Prerequisite: Pharmacy 192. Laboratory—hours to be arranged.
- 194 *Manufacturing Pharmacy* (3) Cooper
The manufacture of bulk pharmaceuticals in the University Hospital Pharmacy. Elective for seniors. Lecture and laboratory—hours to be arranged.

PHILOSOPHY

- 51 *Introduction to Philosophy* (3) Schlager
A critical examination of some of the problems of modern philosophy in relation to scientific and social developments since the Renaissance. Morning.
- 111 *History of Philosophy* (3) Schlager
Philosophy in Greek and Roman Times. Evening.

PHYSICS

- 5 *General Physics* (3) Koehl, Harrison
An introduction to the phenomena of light, heat, force, energy, and the properties of matter. This course may be taken as a terminal course by nonscience students who wish an introduction to the physical sciences. Prerequisite: high school algebra and plane geometry. Material fee, \$11. Lecture and laboratory—morning and afternoon.
- 7 *General Physics* (3) Harrison, Lacerte
Elementary electricity and magnetism. Prerequisite: Physics 5; high school algebra and plane geometry. Material fee, \$11. Lecture, recitation, and laboratory—afternoon and evening.
- 8 *General Physics* (3) Lacerte
This course is the fourth in the sequence of courses 5, 6, 7, and 8, and emphasizes the connection between the fundamental principles studied in courses 5, 6, and 7, and the phenomena and theories of modern physics. Topics considered include electromagnetic waves (light, radio, and X-rays); atomic and molecular structure; radioactivity; nuclear physics; the quantum theory of matter and radiation; and the elementary particles such as electrons, protons, neutrons, and mesons. Prerequisite: Physics 6 and 7. Lecture and recitation—evening.
- 128 *Sound* (3)
Production, propagation, and detection of sound waves; vibrations of sounding bodies; acoustic instruments and acoustic measurements. Prerequisite: Physics 8, Mathematics 20. Evening.

POLITICAL SCIENCE*

- 9 *Government of the United States** (3) Brewer, West
The structure, powers, and operation of the Federal Government: Congress, the President, and the Supreme Court; elections, political parties, and pressure groups. Morning and evening.
- 10 *Government of the United States** (3) LeBlanc
Analysis of the structure, powers, and operation of state and local government: civil rights, major functions of government at federal, state, and local levels. Evening.
- 104 *State and Local Governments* (3) LeBlanc
State, municipal, and other local governmental forms, operations, and problems, with attention to policy formulation and administration, and to the forces of practical politics. Special attention given to the District of Columbia. Evening.
- 107 *Problems in Modern Political Thought* (3) Kratt
Development of democratic political institutions and analysis of the main challenges to constitutional democracy in the 19th and 20th centuries. Morning.

* Six hours of first-group Political Science courses are prerequisite to all second-group courses.

- 111 *Introduction to Comparative Government* (3) Kraus
Government and politics of the principal constitutional democracies of Western Europe, with special attention to Great Britain and France. Evening.
- 121 *The Constitution of the United States* (3) West
The judicial power of the federal courts in constitutional interpretation. Special attention to state-federal relationships, taxation, and legislative-executive-judicial relationships. Morning.
- 151 *Public Administration* (3) LeBlanc
Introductory survey of the theory and practice of governmental administration and its relation to politics, legislation, the courts, and non-governmental organizations and interests. Morning.
- 171 *International Politics* (3) Ludden
Basic forces underlying the conduct of international relations and the formation of foreign policy: power politics, imperialism, collective security, and international cooperation. Morning.
- 172 *International Organization: The United Nations* (3) Ludden
Development and current operation of international organization within the system of sovereign states with emphasis on the United Nations. Evening.
- 178 *International Politics in the Western Hemisphere* (3) Davis
Political relations of the American Republics in the 19th and 20th centuries, the development of Pan Americanism and the Organization of American States. Evening.
- 181 *International Law* (3) Brewer
Survey of the public law of nations with particular emphasis on the law of peace. Morning.
- 220 *Reading Course in Political Theory* (3) Kraus
Readings and group discussions principally on modern political and constitutional theory since the 17th century. Evening.
- 279 *Reading Course in International Affairs* (3) Ludden
Reading and discussion of basic materials designed to stimulate investigation of problems in the nature and development of international law, politics, and organization. Evening.
- 281 *Seminar: International Law and Relations* (3) Brewer
Research topics in the public law of nations, with special attention to problems of pacific settlement, sanctions, war, neutrality, and state jurisdiction, and to their political implications. Evening.
- 299-300 *Thesis* (3-3) The Staff
Hours to be arranged.

PSYCHOLOGY*

- 1 *General Psychology** (3) Johnson, Kyriazis
The fundamental principles underlying human behavior. Morning and evening.
- 4 *Psychology of Adjustment* (3) Caldwell
Processes involved in the total adjustment of the individual, with emphasis on social environment; development in the individual of adjustment techniques. Evening.
- 22 *Introduction to Educational Psychology* (3) _____
Consideration of individual and group differences, adjustments, and the psychology of learning in relation to education and training. Morning.
- 29 *Child Psychology* (3) Johnson
A genetic approach to the study of the child. Morning.
- 98 *Abnormal Psychology* (3) Kotapish
The causes, diagnosis, treatment, and prevention of the various types of maladjustment and mental disorders. Evening.
- 129 *Introduction to Counseling and Guidance* (3) Drees
A survey of the basic principles, techniques, and procedures as applied to vocational, educational, and personal counseling. Evening.
- 131 *Psychological Tests* (3) Hill
A survey of psychological tests and their more common uses in business, industry, government, law, medicine, and education. Material fee, \$7. Morning.
- 144 *Personnel Psychology* (3) Moser
The applications of psychology to personnel work in education, business, industry, and government. Evening.
- 151 *Social Psychology* (3) Tuttle
The social foundations of attitudes and behavior. Individual adjustment to group situations, such as the family, school, fraternity, and occupation. The psychological basis of race prejudice, nationalism, and war. Evening.
- 156 *Psychology of Propaganda and Public Opinion* (3) Tuttle
The psychology of opinion formation, measurement of opinion, social determinants of attitudes, psychological processes in propaganda, basis of receptivity to propaganda, psychological warfare. Evening.
- 193 *Readings in Psychology* (3) The Staff
Supervised readings on specific topics in psychology, with conferences for undergraduate majors. Open only to seniors with 18 or more

* Psychology 1 is prerequisite to all other courses in Psychology.

credits in psychology with a quality-point index of 3.00 or higher. Permission of staff member under whom course is to be taken is necessary. Hours to be arranged.

- 205 *Field Work in Psychology* (3) The Staff
Supervised field work in agencies providing psychological service. Admission by permission of the Executive Officer of the Department. Hours to be arranged.
- 207 *Readings in Psychology for Graduate Students* (3) The Staff
Supervised readings with conferences on specified topics in psychology. Permission of staff member under whom course is to be taken is necessary. Hours to be arranged.
- 225 *Seminar: Mental Hygiene* (3) Caldwell
A study of mental health problems with special attention to programs of prevention. Evening.
- 244 *Seminar: Job Analysis and Evaluation* (3) Mosé
Techniques for the development of work performed descriptions, qualifications analysis, and job demands specifications. The evaluations and classification of jobs for the purpose of establishing wage structures. Evening.
- 295 *Research in Psychology* (arr.) The Staff
Hours and credits to be arranged.
- 299 *Thesis* (3) The Staff
Hours to be arranged.

RELIGION

- 59 *History of Religion* (3) Olmstead
Primitive and ancient national religions: Confucianism, Taoism, Buddhism, Hinduism, and Shintoism—their historical setting, founders, and development of religious thought and culture. Morning.
- 171 *Religion in American Culture* (3) Olmstead
Growth of religious bodies and institutions in American culture, the heritage of religious freedom and diversity, religion and literature, revivalism and education, science and religious thought, divisions and cooperative movements in religion. Evening.

ROMANCE LANGUAGES AND LITERATURES

FRENCH

- 1-2 *First-year French* (3-3) The Staff
For beginners. Pronunciation, grammar, composition, reading of modern French prose. Aural training, oral practice in electronic language workshop. Full-year course: credit will not be given for French 1 until French 2 is completed. Workshop fee, \$6 for each half.* Second half begins July 13. Morning and evening.

3-4 Second-year French (3-3)

The Staff

Advanced grammar and composition, reading in modern French prose, oral practice, introduction to French civilization. Full-year course; credit will not be given for French 3 until French 4 is completed. Prerequisite: French 1-2 or two years of high school French. Second half begins July 13. Morning and evening.

9-10 French Conversation and Composition (3-3)

The Staff

Workshop fee, \$4 for each half.* Second half begins July 13. Morning.

49 French Readings for Nonmajor Students (3)

The Staff

Primarily for graduate students preparing for reading examinations. Undergraduates admitted with permission of the instructor. No academic credit for graduate students. Evening.

SPANISH

1-2 First-year Spanish (3-3)

The Staff

For beginners. Pronunciation, grammar, composition, reading of modern Spanish prose. Aural training, oral practice in electronic language workshop. Full-year course; credit will not be given for Spanish 1 until Spanish 2 is completed. Workshop fee, \$6 for each half.* Second half begins July 13. Morning and evening.

3-4 Second-year Spanish (3-3)

The Staff

Advanced grammar and composition, reading of modern Spanish prose, oral practice, introduction to Hispanic civilization. Full-year course; credit will not be given for Spanish 3 until Spanish 4 is completed. Prerequisite: Spanish 1-2 or two years of high school Spanish. Second half begins July 13. Morning and evening.

9-10 Spanish Conversation and Composition (3-3)

The Staff

Workshop fee, \$4 for each half.* Second half begins July 13. Morning.

SECRETARIAL STUDIES

11 Elementary Shorthand and Transcription (3)

Shorthand

A study of the principles of Gregg shorthand correlated with dictation and transcription. Minimum dictation speed of 60 words a minute attained. Laboratory fee, \$3. Evening.

15 Advanced Shorthand, Typewriting, and Transcription (3)

Shorthand

Dictation and transcription involving vocabularies in specific business situations. Minimum speed of 100 words a minute attained in dictation. Prerequisite: Secretarial Studies 12 or the equivalent. Laboratory fee, \$3. Evening.

* The workshop hour for each half of these courses is in addition to the regularly scheduled recitation periods each week.

SLAVIC LANGUAGES AND LITERATURES

- 1-2 *First-year Russian* (3-3) Yakobson and Staff
 Beginner's course in fundamentals of grammar and pronunciation, with graded reading, oral drill, and written practice. Workshop fee, \$6 for each half.* Second half begins July 13. Evening.

SOCIOLOGY†

- 1 *Man in Modern Society*† (3) Lavell, Stephens
 Origins and development of culture, the impact of groups and institutions on man's social behavior, social processes, social change, and social control. Morning and evening.
- 131 *Social Institutions* (3) Lavell
 Functional analysis of basic social institutions; family, education, religion, and state in the structure of American society. Evening.
- 134 *Sociology of Child Development* (3) Stephens
 Socialization of the child through the home and other social institutions, the changing status of childhood, dependent and handicapped children. Morning.
- 295-96 *Research* (arr.) The Staff
- 299-300 *Thesis* (3-3) The Staff

SPEECH

- A *Speech Clinic* Pettit, Bielski
 Individual or group lessons, without academic credit, for such speech difficulties as lisping, cleft palate, articulatory problems, and stuttering. Fee: for individual lesson, \$7; for group lesson, \$4. Hours to be arranged.
- B *American Speech for Foreign Students* (3) Bielski
 Class limited to foreign-born students. Instruction in the formation of the sounds of spoken English, with emphasis on rhythm and inflection. The International Phonetic Alphabet is used. Recording fee, \$5.50. Evening.
- 1 *Effective Speaking* (3) The Staff
 Preparation and delivery of extempore speeches, developing confidence and poise, body and voice control; selecting and organizing material. Recording fee, \$2. Morning and evening.
- 11 *Voice and Diction* (3) Leggette and Staff
 Developing ease, naturalness, and clarity in the speaking voice. Analysis of individual voices through recordings. Phonetic approach to the

* The workshop hour for each half of this course is in addition to the regularly scheduled recitation periods each week.

† Sociology 1 is prerequisite to all other courses in Sociology.

study of the sounds of English and the standards of speech. Class instruction in the problems of rate, volume, pitch, and quality. Recording fee, \$4. Morning and evening.

- 32 *Oral Reading* (3) Leggette
Reading to others, theory and practice in the problems of interpreting the printed page. Prerequisite: Speech 11 or the permission of the instructor. Recording fee, \$4. Morning.

- 121 *Group Discussion and Conference Leadership* (3) Henigan
The process of thinking and problem solving in committees and small groups, and the methods of leading discussions and conferences. Prerequisite: 6 hours of speech or the permission of the instructor. Morning.

- 177-78 *Clinical Practice in Speech Therapy* (1-1) Pettit, Bielski
Supervised case work in remedial speech—the University Speech Clinic, District of Columbia Crippled Children's Society, and Public School system. This course may be repeated for a total of 6 semester hours. Prerequisite: Speech 175. Hours to be arranged.

- 183-84 *Clinical Practice in Hearing Therapy* (1-1) Pettit
Supervised case work with persons handicapped with hearing losses—the University Speech Clinic, the Washington Hearing Society, and the Veterans Administration Audiology Clinic. This course may be repeated for a total of 3 semester hours. Prerequisite: Speech 181. Hours to be arranged.

- 295 *Research in Speech and Hearing* (arr.) The Staff

STATISTICS

- 51 *Introduction to Business and Economic Statistics* (3) Johnson

Survey of elementary principles and procedures for presenting, analyzing, and interpreting statistical data; consideration of characteristic values; measures of variability, sampling processes, index numbers, time series analysis, and simple correlation. Prerequisite: one entrance unit in algebra. Laboratory fee, \$9. Lecture and laboratory. Evening.

- 52 *Mathematics of Finance* (3) Johnson
Interest and discount, annuities, valuation of stocks and bonds, sinking funds, amortization, valuation of depletable assets, depreciation, building and loan associations. Prerequisite: one entrance unit in algebra. Evening.

- 53 *Introduction to Statistics in Psychology and Education* (3) Thomas

Sources of data, tabulation, charts and graphs, averages, dispersion, quartiles and percentiles, raw scores and derived scores, profiles, norms, and their use, frequency distributions, intelligence and other quotient, reliability and validity of tests, normal curve, correlation, elementary

sampling, statistical error, limitations of statistics. Prerequisite: one entrance unit in algebra. Laboratory fee, \$9. Lecture and laboratory. Afternoon.

91 *Principles of Statistical Methods I** (3) Bright

The meaning, uses, and applications of: variates and attributes; measurement and enumeration; averages and dispersion; frequency distributions and their characteristics; errors of measurement and their control; purposive and random sampling in theory and practice and their errors and estimates. Prerequisite: one entrance unit in algebra. Laboratory fee, \$9. June 15 to July 10. Evening.

92 *Principles of Statistical Methods II** (3) Bright

Correlation theory and applications, power functions; Type I and II errors; introduction to analysis of variance; and the making of statistical decisions. Prerequisite: Statistics 91 or the equivalent. Laboratory fee, \$9. July 10 to August 7. Evening.

117 *Analysis of Variance I* (3) Thomas

The analysis of variance to segregate factors producing significant variation; a method to estimate experimental error, multiple classifications, Latin Square, Greco-Latin Square, factorials; an introduction to model theory. Applications are stressed. Prerequisite: Statistics 91 and 92. Evening.

118 *Correlation and the Chi-square Test I* (3) Thomas

A study of simple, partial, and multiple correlation. Rank correlation, the method of contingency, and analysis of covariance. Tests of independence, likeness, and goodness of fit. Applications are stressed. Prerequisite: Statistics 91 and 92. Evening.

COURSES OFFERED IN SPECIAL PROGRAMS

In addition to the regular courses announced above the University offers the following courses in statistics for students enrolled in the special programs.

119 *The Bases of Statistical Decision Making* (2) Bright

For students in the Navy Graduate Comptrollership Program only. Introduction to the techniques of decision making, with emphasis on applications rather than theory. Includes: binomial distribution, normal distribution, Type I and II errors, estimation, research methodology, and problems of inference. Hours to be arranged.

120 *Principles of Statistical Analysis* (3) Johnson

For students in the Air Force Advanced Management Program only. Introduction to the basic concepts of statistical analysis, measures of central tendency, dispersion, normal distribution, basic statistical inference including estimation and testing hypotheses. Examples utilizing actual case studies in so far as possible. Hours to be arranged.

* Statistics 91 and 92 are for Statistics majors, for students in engineering and in the biological and physical sciences.

ZOOLOGY

- 1-2 *Introduction to Zoology* (4-4) Mortensen, Hansen
An introduction to the study of the structure, functions, and relation of animals, and of the fundamental biological principles involved. Material fee, \$11 for each half. Nine-week term. Zoology 2 begins July 16 and ends August 14. Lecture and laboratory—evening.
- 138 *Histology* (3) Desmond
An introduction to the microscopical anatomy of normal tissues and organs. Prerequisite: Zoology 1-2 or the equivalent. Material fee, \$11. Eight-week term. Lecture and laboratory—evening.
- 295 *Research* (3) The Staff
Investigation of special problems. Hours to be arranged.
- 299 *Thesis* (3) The Staff

THE CATALOGUE ISSUE

1959-60

THE
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WASHINGTON
UNIVERSITY
BULLETIN

VOL. LVIII

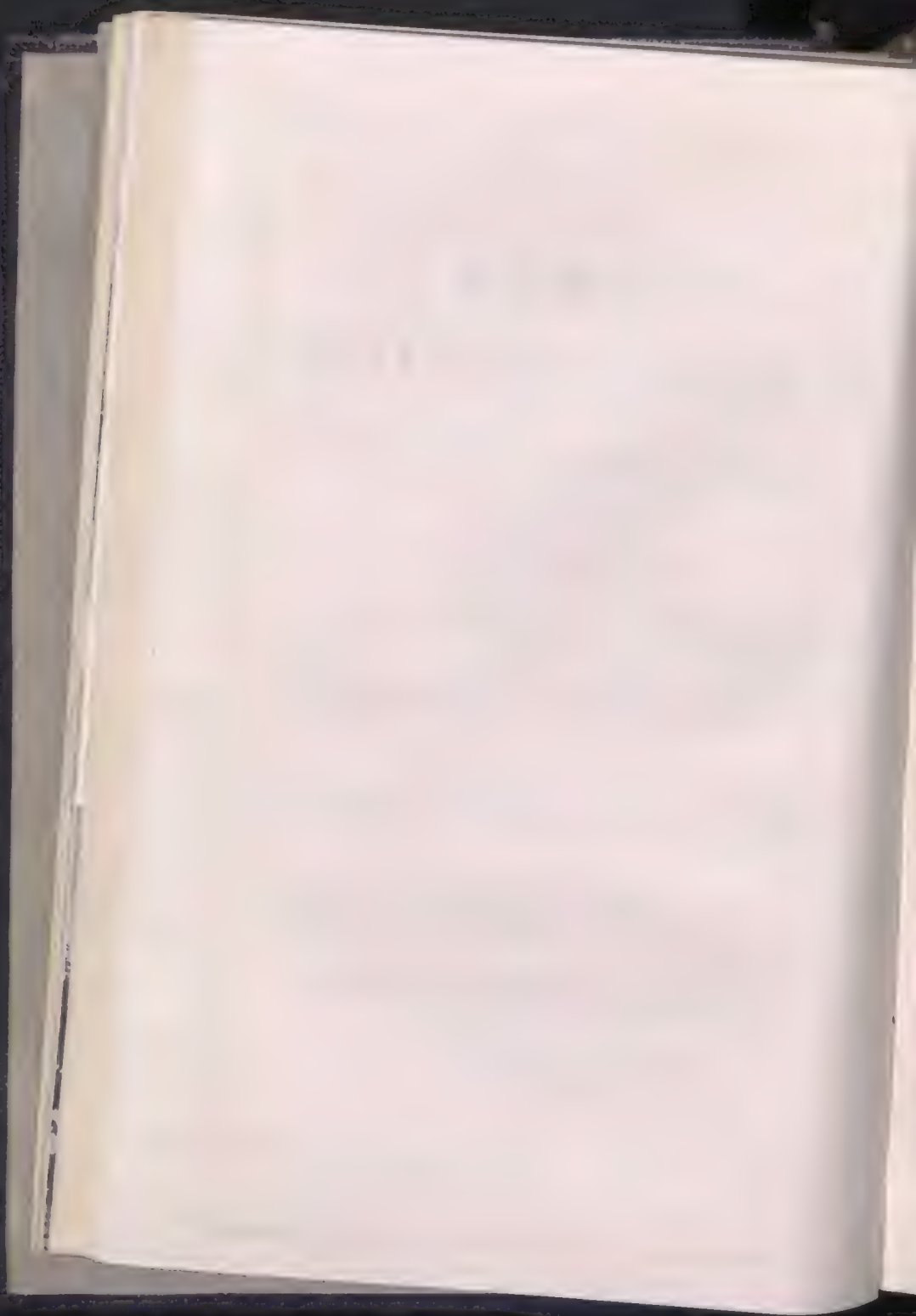
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BY THE UNIVERSITY



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THE UNIVERSITY CALENDAR

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THE UNIVERSITY CALENDAR *

1959-60

Date	Day	Occasion
1959 FALL SEMESTER:		
Sept. 1-11	Tuesday through Friday	Preadvising for all entering Junior College and School of Engineer- ing students
Sept. 10	Thursday	Orientation Assembly for all new students
Sept. 11 and 14 Sept. 15	Friday and Monday .. Tuesday	Placement tests for students en- tering the School of Engineering Curriculum assemblies† Placement tests for colleges and Schools other than the School of Engineering
Sept. 16	Wednesday	Examinations for students who wish to qualify for advanced courses or waive curriculum requirements
Sept. 17 and 18 Sept. 21	Thursday and Friday .. Monday	Meeting of the University Faculty Registration*
Oct. 2	Friday	Classes begin* Last day on which candidates may file, in the Office of the Registrar, subjects of theses and of Engineering problems for the Master's degrees to be con- ferred in February
Oct. 8	Thursday	Last day for submitting to the Dean dissertations of candidates for the degree of Doctor of Juridical Science to be conferred in February
Oct. 17	Saturday	Stated meeting of the Board of Trustees
Nov. 11	Wednesday	Fall Convocation
Nov. 24	Tuesday	Veterans Day. Holiday
Nov. 26-28 ..	Thursday through Saturday	Meeting of the Academic Council
Dec. 1	Tuesday	Thanksgiving recess Last day for submitting to the Dean dissertations of candidates for the degree of Doctor of Philosophy to be conferred in February
Dec. 10	Thursday	Stated meeting of the Board of Trustees
Dec. 12	Saturday	Graduate Record Examination
Dec. 21-Jan. 2	Monday through Saturday	Christmas recess

* In the School of Medicine, registration is conducted September 10, classes begin September 14.
† All new students are expected to attend one Curriculum Assembly.

THE UNIVERSITY CALENDAR—Continued

Date	Day	Occasion
1960		
Jan. 4	Monday	Classes resume Last day for submitting, to the appropriate dean, theses and Engineering problems of candidates for the Master's degrees to be conferred in February
Jan. 13	Wednesday	Last day for submitting, to the appropriate dean, dissertations of candidates for the degrees of Doctor of Education and Doctor of Business Administration to be conferred in February Last day of classes for the fall semester
Jan. 18-26	Monday through Tuesday	Examination period Placement tests for students entering the School of Engineering
Jan. 21	Thursday	
SPRING SEMESTER:		
Jan. 27	Wednesday	Placement tests for colleges and schools other than Engineering Examinations for students who wish to qualify for advanced courses or waive curriculum requirements
Jan. 28 and 29	Thursday and Friday	Registration
Feb. 1	Monday	Classes resume for the spring semester
Feb. 11	Thursday	Stated meeting of the Board of Trustees
Feb. 12	Friday	Last day on which candidates may file, in the Office of the Registrar, subjects of theses and of Engineering problems for the Master's degrees to be conferred in June Last day for submitting, to the Dean, dissertations of candidates for the degree of Doctor of Juridical Science to be conferred in June
Feb. 22	Monday	Winter Convocation. Holiday
March 1	Tuesday	Applications for fellowships for 1960-61 should be filed
March 10	Thursday	Stated meeting of the Board of Trustees
March 22	Tuesday	Meeting of the University Faculty
April 1	Friday	Last day for submitting, to the appropriate dean, dissertations of candidates for the degrees of

THE UNIVERSITY CALENDAR—Continued

Date	Day	Occasion
		Doctor of Philosophy, Doctor of Education, and Doctor of Business Administration to be conferred in June
		Applications for scholarships for 1960-61 should be filed
April 9	Saturday	Graduate Record Examination
April 15-20 ...	Friday through Wednesday	Easter recess
April 26	Tuesday	Meeting of the Academic Council
April 29	Friday	Last day for submitting, to the appropriate dean, theses and Engineering problems of candidates for the Master's degrees to be conferred in June
May 6	Friday	Last day for submitting to the Dean dissertations of candidates for the degree of Doctor of Juridical Science to be conferred in October
May 11	Wednesday	Last day of classes for the spring semester
May 12	Thursday	Annual meeting of the Board of Trustees
May 16-24 ...	Monday through Tuesday	Examination period
May 29	Sunday	Baccalaureate Sermon
May 30	Monday	Memorial Day. Holiday
June 1	Wednesday	Commencement
SUMMER SESSION:*		
June 13	Monday	Registration for eight-week term
June 14	Tuesday	Classes begin
July 4	Monday	Independence Day. Holiday
Aug. 5	Friday	Eight-week term ends
		Last day for submitting, to the appropriate dean, theses and Engineering problems of candidates for the Master's degrees to be conferred in October
Sept. 2	Friday	Last day for submitting, to the appropriate dean, dissertations of candidates for the degrees of Doctor of Education and Doctor of Business Administration to be conferred in October
Sept. 22 and 23	Thursday and Friday	Registration for the fall semester of the academic year 1960-61

* For all schools and colleges offering courses in the Summer Sessions except the Law School and the School of Education.

The dates of the calendar of the Law School will be announced.

The calendar for the special sessions of the School of Education is as follows: Pre-session, June 13-July 1; Six-week Session, July 5-August 12; Post-session, August 13-September 2. Registration for each of these sessions is on the first day of classes.

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ARMY LOGISTICS RESEARCH PROJECT

The Army Logistics Research Project is engaged in a program leading to the development and strengthening of logistics theory and the application of such theory to practice.

Relationships important to managerial decision-making are stressed. The research extends to systems design, analysis of systems performance, and the testing of methodology to meet logistical operating criteria of the present and for the Army of the future.

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Albert Eldridge Smith, B.C.S., *Assistant Comptroller, Accounting*
Henry Paul Bunting, B.S., *Assistant Comptroller, Hospital*
Elizabeth Whitehurst Maddin, *Secretary*

DISBURSING OFFICE

Nira Smith, A.B., *Assistant to the Comptroller for Disbursing*
Edith Shelly, *Voucher Supervisor*
Flora Holmes, *Payroll Supervisor*
Patricia Edith Wilson, *Voucher Clerk*

Eva Rath, *Voucher Clerk*
Theresa D'Auria, *Payroll Clerk*
Diane Dee Montgomery, *Payroll Clerk*

TABULATING OFFICE

Herbert Kreppein, *Tabulating Supervisor*
Marlene Kaye Weaver, *Machine Operator*
Crus Vacilia Rodriguez, *Control Clerk*
Margaret Ellen Brady Lee, *Key Punch Operator*
Evelyn Marie Dickerson, *Key Punch Operator*

CASHIER'S OFFICE

Joseph Hume Spicer, B.C.S., *Cashier*
William Dewell McCown, A.B., *Assistant Cashier*
Daniel John Tyrell, *Assistant Cashier*
Nina Jo Hackett, *Assistant*
Barbara Terry, *Assistant*
Ann Leslie Langluttig, *Clerk-Cashier*
Marilyn Louise Beard, *Clerk-Cashier*
Helen Weathington, *Clerk-Cashier*
Carol Lee Baker, *Clerk-Cashier*

CONTRACT RESEARCH OFFICE

William Rydholm, A.B., *Assistant to the Treasurer*
Florence Ann Reppen, *Clerk-Typist*
Marjorie Modell Gray, *Clerk-Typist*

BUSINESS MANAGER'S OFFICE

Henrietta Rosenblatt, *Assistant to the Business Manager*
George Daniel Dodd, B.S., *Assistant to the Business Manager*
Vincent Duwain Bateman, *Purchasing Agent*
George Burger Heath, *Assistant Purchasing Agent*
Catherine Salter, *Order Clerk*
Therese Irene Howe, *Record Clerk*
Barbara Ann Cunningham, *Secretary*
Doris Ellen Hedden, *Receptionist-Duplicating Clerk*
Cynthia Lue Harner, *Record Clerk*
Charles Forbes, A.B., *Addressograph Operator*
Shirley Ann Malnic, *Clerk-Typist*
Nancy York Wilson, *Clerk-Typist*

PLANT ENGINEER'S OFFICE

Martin Moore Roudabush, *Superintendent of Mechanical Maintenance*
George Dewey Eckert, *Superintendent of Building Maintenance*
Lucille Pleasants, *Clerk*
Harold Douglas Gates, *Assistant Superintendent of Mechanical Maintenance*

SERVICE OFFICE

Adam Clarke Harris, *Assistant Business Manager*
Robert Clark, Jr., *Custodial Supervisor*
Robert John Bailey, *Assistant Custodial Supervisor*
Robert William Cronin, *Supervisor of University Stores*
Joseph Mello, Jr., *Grounds Supervisor*
Birdie Harris, *Manager of the Student Union*
Karolina Hedler, B.S., *Assistant Manager of the Student Union*
Alexandru Stoianovici, A.M., *Assistant Manager of the Book Department of the University Book Store*
Wilhelmina Hamilton, *Assistant in the University Book Store*
Henry Iler, *Stores Clerk*
Ada Virginia Brooks, *Clerk-Typist in the University Book Store*
Virginia Kathryn Murphy, *Clerk in the University Book Store*
James Jacob Yavecchia, *Manager of the Medical Book Store*
Winifred Elizabeth Robinson, *Chief Telephone Operator*
Dilla Wright, *Telephone Operator*

TECHNICAL ASSISTANTS IN SCIENCE DEPARTMENTS

Rudolph Bailey, *Stockroom Clerk in Chemistry*
Joan Beatrice Bernheimer, *Technician in Bacteriology*
Fred Buttner, *Technician in Physiology*
James Francis Delaney, Jr., *Photographer in Medical School Photographic Laboratory*
Dorothy Harris, *Technician in Medicine*
Peter Antel Pasztory, *Technician in Pathology*
Jno Deshon Randall, *Technician in Neurology and Neurological Surgery*
Thomas John Reilly, A.B., *Technician in Biochemistry*
Benito Ethelson Springer, *Stockroom Clerk in Pharmacy*
Ronald James Warren, *Stockroom Clerk in Chemistry*
Caroline Amelia Woodruff, M.S., *Technician in Anatomy*
Wallace Mason Yater, Jr., *Technician in Physics*

OFFICE OF THE DIRECTOR OF ADMISSIONS

Joseph Young Ruth, A.B., *Assistant Director of Admissions*
Margaret LeStourgeon Tymeson, A.B., *Assistant to the Director of Admissions*

Lucile Barbara Carpenter, B.S., *Secretary to the Director of Admissions*
 Jessie Fair Persun, *Evaluator*
 Shirley Howerth Richards, A.B., *Evaluator*
 Dorothy Tomlin, A.M., *Evaluator*
 Jean Wilson McGovern, A.M., *Evaluator*
 Elizabeth Grafton Boyd, B.S., *Evaluator*
 Scott Magruder Eldridge, A.B., *Evaluator*
 Suzanne Johnson Licht, A.B., *Evaluator*
 Frances Frost, A.B., *Evaluator*
 Mary MacLeod Addy, B.S., *Admissions Adviser*
 Jacqueline Salter Young, *Admissions Assistant*
 Beatrice Jordan Harris, *Admissions Assistant*
 Mary Fern Elliott, *Clerk-Typist*
 Jane Lee Henderson McAdams, *Clerk*
 Rosemarie Bayer Murphy, *Typist*
 Clara Laitner Crowl, *Clerk-Typist*
 Sara Jane Steele, *Typist*

OFFICE OF THE REGISTRAR

Virginia Rose Schmidt, *Assistant to the Registrar*
 Beatrice Dickens, A.B., *Assistant to the Registrar*
 Sonia Fay Seaton, *Secretary to the Registrar*
 Mildred Van Horn Lee, *Statistical Clerk*
 Gale Vivian Shaver, *Statistical Clerk*
 Doris Ann Johnson, A.B., *Transcript Clerk*
 Joy Annette Lathers, *Transcript Clerk*
 Bertha McCaslin Bernheisel, B.S., *Graduation Clerk*
 Audrey Martin Zorolow, *Balance Sheet Clerk*
 Darlene Rusciolelli, *Record Clerk*
 William Ray Hinely, *Record Clerk*
 Frances Kite Coons, *Record Clerk*
 Mary Jane Waters, *Record Clerk*
 Eleanor Johnson, *File Clerk*

THE LIBRARY

_____, *Associate Librarian*
 Anna Virginia Appich, A.B., *Assistant Librarian, Acquisitions*
 Mary Elizabeth Thompson, B.S., B.S. in L.S., *Assistant Librarian, Cataloguing*
 Isabella Frances Young, A.B. in L.S., *Assistant Librarian, Medical Library*

Bertha Margarethe Rothe, A.M., B.S. in L.S., LL.B., LL.M., *Assistant Librarian, Law Library*
Joanne Monk, A.M., *Assistant Librarian, Reference*
Alice Pollock Bray, B.S., B.S. in L.S., *Assistant, Cataloguing*
Margaret Laramy Meaker, A.M., B.S. in L.S., *Assistant, Circulation*
Edith Sewell Phillips, A.B., *Assistant, Cataloguing*
Mercy Stoner McCurdy, *Assistant, Acquisitions*
DeElma Clare Smith, A.B., *Assistant, Reserve Book Reading Room*
Vera Warburton, *Assistant, Medical Library*
Edith Carter Baum, A.B., LL.B., *Assistant, Law Library*
Richard Dier, A.B., B.S. in L.S., *Assistant, Circulation*
Marian Judy, LL.B., *Assistant, Law Library*
James Lawrence Murray, M.S., *Assistant, Circulation*
Alice Sheftel, B.S., *Assistant, Acquisitions*
Frances Ebey King, A.B., *Assistant, Acquisitions*
Celia Sue Wells, *Assistant, Circulation*
Joan Spofford Hulfish, *Assistant, Cataloguing*
Gael Annette Jones, *Assistant, Hospital Library*
Alicelia Franklin, B.S., *Assistant, Periodicals*
Charleene Lightsey Jones, B.S., *Assistant, Clerical*

OFFICE OF UNIVERSITY DEVELOPMENT
OFFICE OF THE ASSISTANT TO THE PRESIDENT

Marvin Topping, Ph.D., *Assistant Director of the University Development Division*
Edward Andrew Potts, A.B., LL.B., *Assistant in the Office of University Development Division*
Curtis Lewis, *Secretary*
Rachel Tims Parker, A.B., *Secretary to the Assistant Director of the University Development Division*

EDUCATIONAL COUNSELING OFFICE

Timothy Edward Smith, A.M., *Educational Counselor*
Sharon Marie Huwaldt, *Secretary*

PUBLIC RELATIONS OFFICE

Mary Margaret Davis, A.M., *Associate Director of Public Relations*
James Vincent FitzGerald, A.B., *Special Writer*
Lillian Brooks Brown, *Director of Radio and Television*
John Samuel Toomey, A.B., *Assistant to the Director of Public Relations*
Jane Tunstall Lingo, A.B., *Staff Writer*

James Douglas Ward, *Public Relations Assistant in Charge of Sports Publicity*

Miriam Sara Butwin, *Assistant in Radio and Television*

Karen Brock Manske, *Secretary*

ALUMNI OFFICE

Stanley Tracy, LL.B., *Alumni Secretary*

Gwynne Broadus Bailey, *Administrative Assistant*

John Allen Ginn, B.S., *Alumni Fund Clerk*

Adrienne Barker Kar, *Record Clerk*

John Phillips, *Secretary*

OFFICE OF THE DEAN FOR SPONSORED RESEARCH

Susan Finnell Hart, *Assistant to the Dean*

James Henry Rempe, A.B., *Assistant to the Dean*

Louise Wilson Watts, *Secretary*

OFFICE OF THE PATENT, TRADE-MARK, AND COPYRIGHT
FOUNDATION

Louis James Harris, A.B., LL.B., S.J.D., LL.M., *Executive Director*

Robert Edward Grindle, *Editorial Secretary*

Lillian Theresa Gowney, A.B., *Secretarial Assistant*

Nita May Lowry, B.S., *Assistant Secretary*

STUDENT ACTIVITIES

Jacqueline Isabel Olsen, M.S. in Ed., *Assistant to the Director of Activities for Women*

Lise-Lotte Becker, *Secretary, Office of the Director of Activities for Women*

Edward Ferero, A.B., *Housing Assistant in the Office of the Director of Activities for Men*

Patricia Elizabeth Gussin, *Student Activities Assistant*

INTERCOLLEGIATE ATHLETICS

William Jennings Reinhart, B.B.A., *Head Baseball and Head Basketball Coach*

Eugene Hughey Sherman, Sr., B.S., *Head Football Coach*

Raymond George Hanken, B.S. in P.E., A.M. in Ed., *Assistant Football Coach*

James Joseph Feula, B.S., *Assistant Football Coach*

Andrew Kalen, A.B., *Assistant Football Coach*
William Neal, A.M., *Assistant Football Coach*
Harry Ledford, *Athletic Trainer*
Nancy Wilkes, *Secretary in the Department of Intercollegiate Athletics*

MUSICAL ACTIVITIES

Robert Howe Harmon, A.B., M.D., *Director of the Glee Clubs*
Grace Ruble Harmon, *Associate Director of the Glee Clubs*

VETERANS EDUCATION

Janet Wildman Johnson, A.M., *Assistant Director of Veterans Education*
Margaret Lamb, A.B., *Assistant to the Director of Veterans Education*
Karin Maria Floyd, A.B., *Receptionist and Chief Clerk*

RESIDENCE AND SORORITY HALLS

Gladys Johnson Reed, *Resident Director, Hattie M. Strong Hall for Women*
Bessie Koubele, *Assistant Resident Director, Hattie M. Strong Hall for Women*
_____, *Resident Director, Dolly Madison Hall for Women*
Gloria Kay Barnhouse, *Assistant Resident Director, Dolly Madison Hall for Women*
Harry Carl Gordon, B.S., *Resident Manager, John Quincy Adams Hall for Men*
Robert Stauffer, *Assistant Resident Manager, John Quincy Adams Hall for Men*
Henry Agusiewicz, *Housing Manager, Welling Hall*

THE UNIVERSITY

HISTORY AND ORGANIZATION

HISTORY

The idea of a university located in the Capital of the Nation was sponsored by George Washington, who during his public life urged the establishment of such an institution and who in his will left fifty shares of stock in the Potomac (Canal) Company for the endowment of a university to be established in the District of Columbia "to which the youth of fortune and talents from all parts thereof might be sent for the completion of their Education in all branches of polite literature;—in arts and Sciences,—in acquiring knowledge in the principles of Politics & good Government."

It was George Washington's hope that the "General Government" would extend toward such an institution "a fostering hand". No steps were taken by Congress to carry out the provisions of Washington's will, and the stock that he had bequeathed for the establishment of a university in the District of Columbia became valueless owing to the failure of the Potomac Canal properties.

Meanwhile, however, a movement was started by private persons under the leadership of Luther Rice to establish an institution of higher learning at the seat of the National Government for the education of the Baptist ministry and to afford general collegiate training. In 1819 an association was formed by Luther Rice, Obadiah B. Brown, Spencer H. Cone, and Enoch Reynolds for the purpose of raising funds to buy land for the use of the college.

A group of the Nation's leaders who were especially interested in Washington's idea became patrons of the college and contributed to funds raised for the purchase of land and erection of buildings. Among them were James Monroe, President of the United States; William H. Crawford, Secretary of the Treasury; John C. Calhoun, Secretary of War; William Wirt, Attorney General; Return J. Meigs, Postmaster General; and thirty-two members of Congress.

Legally to implement the college a petition was made to Congress for the incorporation of "the General Convention of the Baptist Denomination in the District of Columbia for evangelical and literary purposes". This petition was denied by Congress, on April 26, 1820, because of its sectarian character.

Failing to obtain a denominational charter members of the association enlarged their objective to embrace national aims, and with the sponsorship of Government leaders there was presented in Congress a bill for the incorporation of "the Columbian Society for literary pur-

poses", it being proposed to realize in this way "the aspirations of Washington, Jefferson and Madison for the erection of a university at the seat of the federal government."

Acting upon this second petition, on February 9, 1821, Congress chartered Columbian College in the District of Columbia, inserting in the charter by special action the provision "that persons of every religious denomination shall be capable of being elected Trustees; nor shall any person, either as President, Professor, Tutor or pupil, be refused admittance into said College or denied any of the privileges, immunities or advantages thereof, for or on account of his sentiments in matters of religion".

Thus Columbian College in the District of Columbia was chartered by Congress as one of the early nonsectarian institutions of higher learning in the United States, under the distinguished favor of President James Monroe and members of his Cabinet.

A tract of approximately forty-seven acres, extending about one-half mile northwest of Boundary Street (Florida Avenue) between Fourteenth and Fifteenth Streets, was purchased and by 1822 the main building was completed sufficiently to use.

Two years later, when the first Commencement was held on December 15, 1824, Congress and the Supreme Court adjourned their sessions to enable their members to attend the exercises. President Monroe, John Quincy Adams, John C. Calhoun, Henry Clay, and the Marquis de Lafayette headed the eminent company in attendance.

By an act of Congress of March 3, 1873, the name of the college was changed to "Columbian University", in recognition of the enlarged scope of the institution. In 1884 the University was moved from its first location on "College Hill", now Columbia Heights, to the new University Hall built for it at Fifteenth and H Streets. Near-by buildings accommodated the School of Medicine and somewhat later, the Law School.

For a period of six years, from 1898 to 1904, the University was placed under control of the Baptist Denomination. In 1904 an act restoring the original secular character of the University and authorizing change of name to The George Washington University was passed by Congress.

Subsequently all colleges, schools, and divisions of the University except the School of Medicine were brought together in the area bounded by Nineteenth, Twenty-third, and G Streets, and Pennsylvania Avenue NW. The School of Medicine is situated on H Street between Thirteenth and Fourteenth Streets NW.

The endowment of the University is \$7,200,000.

In 1930 a new plan of academic organization for the liberal arts work was effected in the establishment of the Junior College and the redefining of graduate work.

PURPOSE AND OBJECTIVES

The main purpose of The George Washington University may be briefly stated: to establish and maintain the high tradition of the University ideal in the political center of the Nation. In the words of the Bill of Incorporation, introduced and subsequently enacted by Congress, in 1821, it was proposed to realize "the aspirations of Washington, Jefferson, and Madison, for the erection of a university at the seat of the Federal Government." The idea of a university so situated was, in the minds of the early sponsors and patrons, to afford a relation between the traditional objectives of higher education, and, as Washington stated: "knowledge in the principles of Politics and good Government." This central idea of a university functioning in the Capital of the Nation, nonsectarian, free of sectional limitations, conscious of its wide American relationships, and open to the ever-increasing international influences which bear upon it, has been continuous through nearly a century and a half of difficult growth and adaptation.

The main, simple purpose of this university has been therefore, to develop the university ideal in the place of greatest national significance, flexible before the changing needs of its growing national constituency and loyal to the traditional principles of learning and research, in providing through disciplined reason, wisdom for the individual and his society. This statement intends to differentiate University objectives from the incorporation of the more specific objectives of the colleges and schools which comprise the University. Theirs is the problem of relating the university ideal to the particular application of scholarship and professional learning in their several fields.

THE COLLEGES, SCHOOLS, AND DIVISIONS

The George Washington University includes fourteen colleges, schools, and divisions, as follows:

The Junior College offers the work of the first two years of the four-year college program in the liberal arts and sciences and two years of preprofessional work. Each of these curricula leads to the degree of Associate in Arts. It also offers two-year terminal curricula. Those in Accounting and Secretarial Studies lead to the degree of Associate in Arts; those in Home Economics and Physical Science lead to the degree of Associate in Science.

Columbian College offers the work of the junior and senior years of the four-year college program in the liberal arts and sciences leading to the degrees of Bachelor of Arts and Bachelor of Science. In cooperation with the Department of Pathology and the University Hospital, Columbian College offers a course in Medical Technology leading to the degree of Bachelor of Science in Medical Technology. It also offers the studies

leading to the degrees of Master of Arts, Master of Science, and Master of Fine Arts.

The Graduate Council offers a program of advanced study and research leading to the degree of Doctor of Philosophy.

The School of Medicine offers work leading to the degree of Doctor of Medicine.

The Law School offers professional and graduate courses leading to the degrees of Bachelor of Laws, Juris Doctor, Master of Laws, Master of Comparative Law, and Doctor of Juridical Science.

The School of Engineering offers courses leading to the degrees of Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, Bachelor of Science in Engineering, Master of Science in Engineering, and Master of Engineering Administration.

The School of Pharmacy offers courses leading to the degrees of Bachelor of Science in Pharmacy and Master of Science in Pharmacy.

The School of Education offers undergraduate programs leading to the degrees of Bachelor of Arts in Education, Bachelor of Science in Home Economics, and Bachelor of Science in Physical Education, and graduate studies leading to the degrees of Master of Arts in Education and Doctor of Education.

The School of Government offers undergraduate programs of study in Foreign Affairs, Public Affairs, Accounting, Business Administration, and Statistics, leading to the degree of Bachelor of Arts in Government. Graduate work is offered leading to the following degrees: Master of Arts in Government in the fields of Foreign Affairs, Public Affairs, Economic Policy, Accounting, Business and Economic Statistics, Counseling, and Psychometrics; Master of Arts in Public Administration; Master of Arts in Personnel Administration; Master of Business Administration; and Doctor of Business Administration.

The College of General Studies supplements the adult education program of the University through its Off-Campus Division, Campus Division, and Division of Community Services.

The Division of University Students make available courses for mature students, not candidates for degrees in this University.

The Division of Special Students makes available courses for students in the process of qualifying for degree candidacy.

The Division of Air Science offers a program of Air Force ROTC training which is integrated with the curricula of the Colleges and schools of the University and leads to appointment as a commissioned officer in the United States Air Force Reserve.

The Summer Sessions.

INSTRUCTIONAL DIVISIONS

The instructional divisions, established at The George Washington University in 1930, are organized on the basis of the relationship of course content, interrelation of methods and prerequisites, and similarity of background and viewpoint. Originally there were four divisions, Languages and Literatures, Mathematics and Physical Sciences, Natural Sciences, and Social Sciences. The plan is being restudied and a provisional alignment has been made which adds two new divisions, Applied Sciences, and Medical Sciences.

ADMINISTRATIVE AND RESEARCH ACTIVITIES

ADMINISTRATIVE UNITS

The University maintains the following Administrative Units: Health Administration, Veterans Education, the Reading Clinic, the Speech Clinic, and the Testing and Counseling Center.

RESEARCH PROJECTS

Research projects sponsored by agencies of the Federal Government and by private foundations and industries are conducted. Cooperation between these projects and the various departments of instruction is as close as the nature and needs of the projects and departments will permit.

ACADEMIC STATUS

The George Washington University is accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools. This is important to students who wish to transfer credits from one institution to another.

The University is on the approved list of the American Association of University Women and is a member of the College Entrance Examination Board.

The Law School is a charter member of the Association of American Law Schools and is approved by the Section of Legal Education and Admissions to the Bar of the American Bar Association. The School of Medicine is a member of the Association of American Medical Colleges and is one of the medical colleges which have been continuously approved by the American Medical Association. The School of Pharmacy is accredited by the American Council on Pharmaceutical Education as a class "A" school. It is a member of the American Association of Colleges of Pharmacy. The School of Engineering is on the accredited list of the Engineers' Council for Professional Development. The School of Education is a charter member of the American Association of Colleges for Teacher Education and is accredited by the National Council for Accreditation of Teacher Education.

LOCATION

The George Washington University is in downtown Washington four blocks west of the White House and east of the Potomac River with its extensive parkway. Readily accessible to the University are many of the departments of the Government, including the Department of State, the Department of the Treasury, the Department of Justice, the Department of the Army, the Department of the Navy, the Department of the Interior, the Department of Agriculture, the Department of Commerce, and the Department of Labor, as well as the National Archives, the Capitol, the Library of Congress, the National Academy of Sciences, the Pan American Union, the National Gallery of Art, and the Corcoran Gallery of Art.

GOVERNMENT

The government and general educational management of The George Washington University are vested in a self-perpetuating Board of Trustees, with the President of the University as a member ex officio. The members of the Board are named for a period of three years and are divided into three classes. The members of one class are elected at each annual meeting to fill the places of the members whose terms of office expire. Two members of each class are nominated by the Alumni Association.

EDUCATIONAL FACILITIES

BUILDINGS

Buildings, grounds, and equipment are valued at approximately \$23,500,000.

The buildings of the Junior College, Columbian College, the Graduate Council, the Law School, the School of Engineering, the School of Pharmacy, the School of Education, the School of Government, the College of General Studies, the Division of University Students, the Division of Special Students, the Division of Air Science, the University Hospital and Outpatient Department, and the Cancer Clinic are located between Nineteenth and Twenty-fourth Streets and between Pennsylvania Avenue and G Street NW. The School of Medicine is at Fourteenth and H Streets NW. The buildings of the University are as follows:

John Quincy Adams Hall, 730 Nineteenth Street. Residence hall for men.

Bacon Hall, 2000 H Street. Named in honor of the late Joel Smith Bacon, President of the University from 1843 to 1854. Offices of the Dean of the Graduate Council, the Dean for Sponsored Research, the Assistant to the President, the Development Division, the Army Logistics Research Project, the Educational Counselor; offices and lounge for the Law Faculty; the Alumni Office; reception rooms for returning alumni.

Binney Hall, 2018 I Street. Named in honor of the late Joseph Getchell Binney, President of the University from 1855 to 1858. Offices, classrooms, and laboratories of the Reading Clinic.

Chapin Hall, 2128 H Street (rear). Named in honor of the late Stephen Chapin, President of the University from 1828 to 1841. Offices and classrooms of the Air Force ROTC.

Coreoran Hall, 725 Twenty-first Street. Named in honor of the late William W. Coreoran, benefactor of the University and a former member of the Board of Trustees. Offices of the Treasurer, the departments of Chemistry and Physics; Chemistry Research Project; the chemistry and physics laboratories; classrooms.

Davis-Hodgkins House, 731 Twenty-second Street. Offices and lounges of engineering students' organizations.

Everglades Apartments, 2223 H Street. Residence hall for nurses.

Faculty Club House, 714 Twenty-first Street.

Gymnasium, 2010-12 H Street.

Hall of Government, 710 Twenty-first Street. The gift of the late Mrs. Henry Alvah Strong, former Trustee of the University. Offices of the Dean of the School of Government, the departments of Accounting, Business and Public Administration, Economics, History, Political Science, and Statistics; Offices of the Air Force Advanced Management Course and Navy Graduate Comptroller-ship Program; classrooms.

Harlan-Brewer House, 1923 H Street. Offices of law student organizations, lounges, reading rooms.

Hospital House Staff Residence, 818 Twenty-second Street.

Hospital and Outpatient Department, Washington Circle.

International House, 2110 G Street. Office of the Adviser to Students from Foreign Countries; club rooms.

Lisner Auditorium, 730 Twenty-first Street. The gift of the late Abram Lisner,

- former Trustee of the University. The Auditorium; Lisner Lounge; offices and classrooms of the Department of Speech, the Speech Clinic, and the housing officer.
- Dolly Madison Hall, 736 Twenty-second Street. Residence hall for women.
- James Monroe Hall, 2115 G Street. Offices of the Dean of the Junior College, the Dean of Columbian College, the Dean of the Division of University Students, the Dean of the School of Education; the departments of Education, English (English and American Literature), Germanic Languages, Journalism, Mathematics, Psychology, and Secretarial Studies; classrooms.
- Office of the President, 2003 G Street. Offices of the President, Dean of Faculties, and Administrative Secretary.
- Placement Office, 2114 G Street.
- Samson Hall, 2036 H Street. Named in honor of the late George Whitefield Samson, President of the University from 1859 to 1871. Comptroller's Office; Dursbursing Office; offices of the departments of Chemistry, Geology, and Physics.
- School of Medicine, 1335-1339 H Street. Offices of the Dean and Staff of the School of Medicine; the Medical Library; laboratories; lecture rooms; research laboratories; student and faculty lounges; and University Medical Bookstore.
- Sorority Halls:
- 2129 G Street. Apartments of Pi Beta Phi, Chi Omega, Sigma Kappa, Alpha Delta Pi, Delta Zeta, Zeta Tau Alpha, and Kappa Kappa Gamma sororities.
- 2131 G Street. Apartment of Delta Gamma Sorority.
- 802 Twenty-first Street. Apartment of Phi Sigma Sigma sorority.
- 2112 G Street. Apartments of Kappa Alpha Theta and Kappa Delta sororities.
- Staughton Hall, 707 Twenty-second Street. Named in honor of the late William Staughton, President of the University from 1821 to 1827. Offices and laboratories of the Navy Logistics Research Project.
- Stockton Hall, 720 Twentieth Street. Named in honor of the late Rear Admiral Charles Herbert Stockton, President of the University from 1910 to 1918. Law School; office of the Dean and Faculty, library, and lecture halls.
- Hattie M. Strong Hall, 620 Twenty-first Street. Named in honor of the donor, the late Mrs. Henry Alvah Strong, former Trustee of the University. Residence hall for women.
- Student Union, 2125 G Street. Offices of student organizations, student cafeteria and snack bar, reading room, lounge, game and music room, and the "Lost and Found" Office.
- Tompkins Hall of Engineering, 725 Twenty-third Street. The gift of the late Charles H. Tompkins, former Trustee of the University. Offices of the Dean of the School of Engineering; the departments of Civil, Electrical, Mechanical Engineering, and Engineering Administration; Engineering testing laboratories, general laboratories, drafting rooms, and classrooms.
- University Book Store, 2120 H Street. University Medical Bookstore, 1335 H Street.
- University Library, 2023 G Street. The gift of the late Abram Lisner, former Trustee of the University. The library, rooms of the Board of Trustees, Office of the President Emeritus, Faculty Conference Room, classrooms.
- The Helen L. and Mary E. Warwick Memorial Building, 2300 K Street. Diagnostic and treatment rooms, and research laboratories of the George Washington University Cancer Clinic.
- Welling Hall, 814 Twenty-second Street. Named in honor of the late James Clarke Welling, President of the University from 1871 to 1894. Residence hall for men.
- Woodhull House, 2033 G Street. Gift of the late General Maxwell Van Zandt Woodhull, former Trustee of the University. Office of the Director of Activities for Women; meeting rooms for student activities.

- Building A, 2026 G Street. Offices of the Department of Romance Languages.
- Building B, 2024 G Street. Offices, laboratories, and classrooms of the Department of Home Economics.
- Building C, 2029 G Street. Offices of the Registrar and the Director of Admissions; offices and laboratories of the departments of Biology, Botany, Geology, and Zoology; language laboratory; classrooms.
- Building D, 2013 G Street. Office of the Business Manager; Human Resources Research Office.
- Building F, 706 Twentieth Street. Offices of the Dean of the College of General Studies.
- Building G, 712 Twentieth Street. Offices of the departments of English (Composition section) and Slavic Languages; Academic Editor.
- Building H, 714-16 Twentieth Street. Offices and locker rooms of the Department of Physical Education for Women.
- Building I, 2135 G Street. Offices, classrooms, and laboratories of the Department of Geography.
- Buildings J and L, 2131 and 2129 G Street (rear). Classrooms and locker rooms of the Department of Physical Education for Women.
- Buildings M and N, 716-18 Twenty-first Street. Offices of the departments of Business and Public Administration and Philosophy; offices and laboratories of the Testing and Counseling Center.
- Building O, 2106 G Street. Office of the Department of Religion.
- Building P, 2108 G Street. Offices of the Student Health Service and the Dean of the Division of Special Students.
- Building Q, 2029 H Street. Office of the Director of Veterans Education, Plant Engineer, and the Director of Activities for Men.
- Building R, 2027 H Street. Offices of the Graduate Manager of Athletics, and the Athletic Staff.
- Building S, 2025 H Street. Offices of the Department of Physical Education for Men and Public Relations.
- Building T, 2110 G Street. Offices of the Dean of the Summer Sessions; International House (see International House).
- Building V, 2114 H Street. Research laboratories of the Department of Physics.
- Building W, 2128 H Street. Offices of the Dean and Faculty of the School of Pharmacy; pharmacy laboratories; classrooms.
- Building X, 2107 H Street. Offices of the departments of Art and Sociology and Anthropology; Patent, Trade-Mark, and Copyright Foundation; Faculty offices.
- Building Y, 802 Twenty-first Street. Faculty offices.

LIBRARY FACILITIES

The Library collections of The George Washington University are housed in the University Library, the general library of the University; and in the departmental libraries of law, in Stockton Hall, and medicine, in the School of Medicine.

These collections contain approximately 332,000 volumes—258,600 in the University Library, 54,000 in the Law Library, and 19,400 in the Medical Library. Approximately 10,000 volumes a year are added to the library's resources. Endowments, supplementing the University appropriation, provide books in the fields of American civilization, American literature, foreign service, history, and public finance, and gifts from many sources have enriched the collections. The Libraries currently receive 1,800 periodicals.

In the modern University Library building, erected in 1939, on the first three floors are the delivery hall, card catalogue, reference and main reading rooms, periodical room, and reserve book rooms; on the fourth floor are ten planned seminar rooms. To the original 135,000 volume eight-tier stack of modern steel construction has been added a similar unit of 170,000 volume capacity with 50 study carrels.

Of the special subject collections in the University Libraries, the most recent acquisition is the internationally known library of the Carnegie Endowment for International Peace, which was assembled during forty years of its activity in Washington, and was purchased by the University. The collection contains 50,000 bound volumes and 20,000 pamphlets in the fields of international law and relations, history, and economics. Other collections in the Library are the W. Lloyd Wright collection of Washingtoniana, acquired in 1950; the Richard Heinzel Collection of Germanic philology and literature; the Curt Wachsmuth Collection of Greek and Roman literature, archaeology, and history; the Mount Vernon Collection on political history, international law, and the social sciences; a representative collection of Spanish American books, the gift of the governments of Hispanic America; and the Chauncey Mitchell Depew Public Speaking Collection.

Information concerning the use of the Libraries may be obtained at the Library service desks. A classified list on cards of selected recent acquisitions is available at frequent intervals, in addition to the complete information in the card catalogue. Monthly art exhibitions are held on the first and second floors of the University Library during the academic year.

The hours of the University Library and the Law Library are Monday through Friday, 9:00 A.M. to 10:00 P.M.; Saturday, 9:00 A.M. to 5:00 P.M.; Sunday, 2:00 to 6:00 P.M. The Medical Library is open Monday through Friday, 9:00 A.M. to 10:00 P.M.; Saturday, 9:00 A.M. to 5:00 P.M.

The Library is administered for the curricular, reference, and recreational needs and interests of the students. Instruction in the use of the library is given in the required English courses, and by the reference librarians. The Library endeavors to assist students and all members of the University to use the rich library resources of Washington and the unusual opportunities they offer for extensive research. Interlibrary loan arrangements are maintained with other libraries in the city and in the United States.

The student has access to the Library of Congress, the Public Library of the District of Columbia and its branches, the library of the Pan American Union, the Library of the Bureau of Railway Economics, the Library of the United States Department of Agriculture, the Library of the United States Office of Education, the National Library of Medicine, the Library of the Smithsonian Institution, and many of the other great special collections of the government departments.

ADMISSION

All colleges, schools, and divisions of the University accept men and women.

Qualified students may be admitted to any college, school, or division of the University, except the School of Medicine, at the beginning of either semester or any of the Summer Sessions.

Entrance to the School of Medicine in 1959-60 is permitted only at the opening of the semester beginning September 1959.

The University reserves the right to refuse admission to any student who has a previous academic record of such grade as to create doubt of his ability to pursue college work successfully or who, for any other reason, would not be an acceptable student.

APPLICATION FOR ADMISSION

An applicant for admission must obtain from the Office of the Director of Admissions an application blank which he must fill out completely and return with the application fee of \$10 if applying as a degree candidate, \$5 if applying as a nondegree candidate. A recent photograph, with signature, of the applicant must be attached to the blank.

Applications should be filed by July 1 for the fall semester, January 1 for the spring semester, and May 1 for the Summer Sessions.

An applicant from a secondary school must send the high school record form provided by the University to his high school principal with the request that the principal fill out the form and mail it *directly* to the Office of the Director of Admissions.

An applicant who has previously attended an institution of higher learning must request the registrar of that institution to mail directly to the Office of the Director of Admissions a transcript of his record. If he has attended more than one such institution he must request the registrar of each institution to send to the Office of the Director of Admissions a transcript of his record, *even though credits were not earned*, together with an honorable dismissal from the institution last attended.

The Graduate Record Examination administered by the Educational Testing Service, Princeton, New Jersey, is accepted as supplemental evidence of the educational attainments of the applicant for graduate study, and the appropriate report should accompany the application for admission to graduate degree candidacy whenever available.

TEST INFORMATION

The requirement of tests for Junior College and School of Engineering applicants coming directly from secondary schools is specified in the entrance statement of these respective divisions.

Arrangement for tests is the responsibility of the applicant and should be made with the College Entrance Examination Board, 20 Nassau Street, Princeton, New Jersey, not less than one month before the date of the test. On the application for the test, the student should specify that the scores be sent to the Director of Admissions, The George Washington University, Washington 6, D. C.

College Entrance Board tests are given at a large number of examination centers throughout the United States, including Washington, D. C., on the following dates:

Scholastic Aptitude Test.—January 10, February 14, March 14, May 16, August 12, and December 5, 1959; January 9, February 6, March 12, May 21, and August 10, 1960.

Achievement Tests.—March 14, May 16, August 12, and December 5, 1959; March 12, May 21, and August 10, 1960.

In special circumstances, the Committee on Admission and Advanced Standing may prescribe other appropriate tests. Necessary instructions will be sent to the applicant by the Director of Admissions.

CREDIT FROM HIGHER INSTITUTIONS

An applicant for advanced standing may be considered for admission upon the presentation of satisfactory credentials from an accredited institution of higher learning. The student must be in good standing as to scholarship and conduct, and must be eligible to return to the previously attended institution in the semester for which he seeks admission to this University.

If the transcript of record from such an institution includes the record of his secondary school work, it is not necessary for the applicant to have forwarded a separate record directly from the principal of the secondary school. High school work is considered only as fulfilling entrance requirements; it is never credited toward advanced standing.

Properly certified courses taken at accredited colleges or universities may be applied toward a degree at this University, subject to the curriculum requirements and regulations of the school or college to which admission is sought. Work of low pass grade (such as D or the equivalent) will not be considered for transfer.

The University reserves the right to refuse credit for transfer in whole or in part, or to allow it provisionally. Credit so given may be withdrawn for subsequent poor work.

METHODS OF READMISSION

A student who has previously registered in the University, but who has not been in attendance during the semester prior to registration (summer

session excluded) should file an application for readmission in advance of registration. If the student is seeking readmission as a degree candidate and was previously registered as a nondegree student, or if he has attended one or more higher institutions during his absence from the University, he must file in the Office of the Director of Admissions complete and official transcripts of record from each institution attended before his application may be considered. All applications for readmission are considered on the basis of regulations effective for the specific semester in which the applicant seeks to enter.

TRANSFER WITHIN THE UNIVERSITY

For information concerning transfer from one college, school, or division to another within the University, see pages 52-53.

ENTRANCE REQUIREMENTS*

The applicant for undergraduate or graduate work must be of good character and must have an academic background appropriate for the program of studies contemplated.

THE JUNIOR COLLEGE

Consideration for admission is based upon the combined evidence of the following factors:

1. An acceptable certificate of graduation from an accredited secondary school, showing a minimum of fifteen "units"†
2. The principal's statement that the applicant is adequately prepared to undertake college work with reasonable prospect of success
3. Scores on the Scholastic Aptitude Test of the College Entrance Examination Board

Applicants from secondary schools should refer to pages 13-14 for Test Information concerning the time, place, and directions for the required Scholastic Aptitude Test.

The Committee on Admission and Advanced Standing will consider the adequacy of the qualifications for academic success of an applicant who, because of unusual circumstances, does not present all the formal requirements stated above. The Committee may prescribe appropriate tests as necessary.

Distribution of Units for All Curricula.—Certification by the principal that the student has satisfied all curriculum requirements of the school will be accepted in lieu of any prescribed distribution of units. Attention is called, however, to the necessity of completing stated prerequisite

* Entrance requirements are established by the faculties of the several colleges, schools, and divisions. The Director of Admissions, as agent for the faculties, administers regulations governing admissions, readmission, and transfer.

† A unit represents a year's study in a secondary school subject, including in the aggregate not less than 120 sixty-minute periods of prepared classroom work.

studies during the secondary school period for admission to certain curricula. It is to be noted that one unit of algebra is prerequisite to courses in chemistry, mathematics, physics, and statistics, and that in addition one unit of plane geometry is prerequisite to courses in mathematics and physics. In the instance of applicants who do not meet the above stated mathematics requirements, algebra and plane geometry may be taken without college credit when offered by the Department of Mathematics. For a statement of the foreign language requirements see pages 69-70.

A desirable secondary school program in preparation for college would include: four years of English, at least two years of one foreign language, two years of natural or physical science with laboratory instruction (over and beyond the so-called "General Sciences"), two or three years of social studies (with concentration on history), one or two years of basic mathematics.

COLUMBIAN COLLEGE (THE SENIOR COLLEGE)

For the Bachelor's Degrees

Two years of Junior College work leading to the degree of Associate in Arts, or the lower-division work in institutions not organized on the junior-senior-college plan, following a specified curriculum, meet the minimum requirements of Columbian College. In addition, however, scholarship requirements for admission may be set somewhat higher than those for graduation from the Junior College.

Bachelor of Arts.—An Associate in Arts degree based on the *Arts and Letters* curriculum in the Junior College, or the equivalent (see page 70), is required.

Bachelor of Science.—An Associate in Arts degree based on the *Science* curriculum in the Junior College, or the equivalent (see pages 70-71), is required.

Bachelor of Science in Medical Technology.—An Associate in Arts degree based on the *Science* curriculum in the Junior College, including Chemistry 11-12, Zoology 1-2, and Bacteriology 112, or the equivalent (see pages 70-71), is required.

For the Master's Degrees

An approved Bachelor's degree from an accredited higher institution is required. A student from an unaccredited institution may be admitted at the discretion of the Committee on Admission and Advanced Standing, but he will be required to take such extra work above the minimum requirements as may be prescribed. An appropriate distribution of courses and a superior quality of work in the major field are essential.

Applications for admission must be approved by the department or division and by the Dean.

Master of Arts.—The student's undergraduate curriculum must have included a program of study substantially equivalent to the Bachelor of Arts major in his chosen field at this University.

Master of Science.—The student's undergraduate curriculum must have included a program of study substantially equivalent to the Bachelor of Science major in his chosen field at this University.

Master of Fine Arts.—A Bachelor of Arts degree at this University with an undergraduate major in drawing and painting, sculpture, or commercial art, or the equivalent.

THE GRADUATE COUNCIL

Doctor of Philosophy.—The student must have an adequate academic preparation for advanced study in the proposed field as evidenced by an approved Bachelor's degree, for provisional status; or one year of acceptable graduate work, for full status; together with acceptable personal qualities and the capacity for creative work.

THE SCHOOL OF MEDICINE

Doctor of Medicine.—A minimum of ninety semester hours of credit, applicable toward a degree in this University or in another approved college of liberal arts, is required for admission to the School of Medicine. A semester hour represents one class hour or a minimum of two laboratory hours a week for a period of approximately sixteen weeks. A credit earned at an institution operating on the quarter system is the equivalent of two thirds of a semester hour. Specific required courses are:

1. Chemistry as follows: (a) 8 semester hours in general inorganic chemistry, of which at least 4 hours are laboratory work (qualitative analysis may be counted as general inorganic chemistry); (b) 6 or 8 semester hours, the equivalent of a one-year college course of organic chemistry, including laboratory work.

2. Physics, 8 semester hours, of which at least 2 hours are laboratory work.

3. Biology, 8 semester hours, of which at least 4 hours are laboratory work. This requirement may be satisfied by a course of 8 semester hours in either general biology or zoology.

4. English composition and literature, 6 semester hours; the usual introductory college course or the equivalent.

Academic ability is evaluated on the basis of general quality-point index, scientific index, scope of studies, specific interests, yearly progress, and the results of the required Medical College Admission Test. Well qualified candidates are eligible for admission after completing the min-

imal 90 semester-hour requirement. However, a high percentage of students are better qualified for the study of medicine after four years of college work.

Advanced Standing

A student who has satisfactorily completed one or two years at any other medical school approved by the American Medical Association, and who has the necessary preliminary educational requirements, may apply for advanced standing.

THE LAW SCHOOL

For the Degrees of Bachelor of Laws and Juris Doctor

Bachelor of Laws.—A Bachelor of Arts or equivalent degree awarded upon completion of a four-year course in an approved college or university is required. The baccalaureate record must be of satisfactory quality and must include an acceptable distribution of courses. Eligibility is evaluated on the basis of personal and scholastic records, supplemented by the result on the legal aptitude test. An applicant will not be admitted who has been in attendance at another law school and who is ineligible to return to that school in good standing. From the applicants, a selection will be made by the Committee on Admissions.

Juris Doctor.—A student does not register as a candidate for the degree until his last year in the Law School. For details, see page 131.

ADVANCED STANDING

Advanced standing toward the degree of Bachelor of Laws will be granted only for work successfully completed in other law schools which are members of the Association of American Law Schools. However, credits will not be recognized in excess of those which might be obtained in a similar period in this Law School.

Advanced standing will not be granted for law work already counted toward the Bachelor of Arts or other pre-legal degree.

Advanced standing will not be granted toward meeting the requirements for the degrees of Juris Doctor or Master of Laws.

For the Graduate Degrees

*Master of Laws.**—A Bachelor of Arts or equivalent degree from an approved college or university and a Bachelor of Laws or equivalent degree from a member school of the Association of American Law Schools

* One half of the work necessary for graduation from an approved college or university completed prior to entry into military service may be accepted as satisfying the admission requirement for pre-legal work, provided the applicant completed not less than twenty months of continuous service in the armed forces of the United States during World War II and prior to the beginning of the 1948-49 fall semester.

are required. Candidates for admission must have attained a *B* average on all work done for the Bachelor of Laws degree, except that, at the discretion of the Committee on Graduate Studies, applicants otherwise eligible may be admitted on proof of experience and attainment as an alternative. Advanced standing will not be granted for credits earned while a candidate for the first degree in law. Credits earned as an unclassified student will not be applicable toward meeting the requirements of the degree unless specific provision therefor is included in the letter of admission.

Master of Comparative Law and Master of Comparative Law (American Practice).—The following are required: (1) the successful completion of and graduation from a course in arts, philosophy, letters, or sciences, equivalent to graduation from a gymnasium, lycée, or liceo; and (2) graduation in law from a recognized foreign university where training was in Civil Law.

Doctor of Juridical Science.—The following are required: a Bachelor of Arts or equivalent degree from an approved college or university and a Bachelor of Laws or equivalent degree, earned with high rank, from a member school of the Association of American Law Schools, and outstanding capacity for scholarly work in the field of law.

Unclassified Students

A person who is in good standing as a degree candidate in another law school which is a member of the Association of American Law Schools may, at the discretion of the Dean, be admitted as an unclassified student in order to earn credits for transfer to the other law school.

A person who is a member of the bar or a person, not a member of the bar, who is a graduate of a member school of the Association of American Law Schools may, at the discretion of the Dean, be admitted as an unclassified student.

Unclassified students participate in the work of the course and take examinations. Courses taken by unclassified students will not be credited toward degrees at this Law School.

Continuing Legal Education Students

A simplified admission and registration procedure is provided for members of the bar desiring to register as continuing legal education students to take courses on a noncredit basis. Registration as a Continuing Legal Education student does not entitle the registrant to participate in the student activities or benefit from the medical privileges of the University. Members of the bar desiring to register as degree candidates or as unclassified graduate students should file the regular application for admission form.

THE SCHOOL OF ENGINEERING

The applicant for undergraduate or graduate work must be of good character and must have had academic background appropriate for the program of studies contemplated.

For Undergraduate Study

For the Degrees of Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, Bachelor of Science in Engineering.—Consideration for admission is based upon the combined evidence of the following factors:

1. An acceptable certificate of graduation from an accredited secondary school showing a minimum of fifteen "units"*
2. The principal's statement that the applicant is adequately prepared to undertake college work with reasonable prospect of success
3. Scores on the Scholastic Aptitude Test of the College Entrance Examination Board, which is required. (For details, see pages 13-14.)

The Committee on Admission and Advanced Standing will consider the adequacy of the qualifications for academic success of an applicant who, because of unusual circumstances, does not present all of the formal requirements stated above. The Committee may prescribe appropriate tests when necessary.

Nine and one-half of the fifteen units required for entrance must be distributed as follows: three in English, two in algebra, one in plane geometry, one-half in plane trigonometry, one in physics or chemistry, and two in one foreign language or history. A graduate of an approved high school who does not offer for admission the particular subjects required for the engineering curriculum, but who does present not less than fifteen acceptable units, may be admitted on condition, if such deficiency in the distribution of units does not exceed two units.

ADVANCED STANDING

Advanced standing may be granted for work successfully completed at accredited institutions of higher learning. Credit will be assigned by the School of Engineering to the extent that the work taken at previous institutions meets the requirements for the degree sought at this University, and subject to the general University regulations concerning satisfactory subsequent work.

For Graduate Study

For admission to graduate study the student must hold a Bachelor's degree from a recognized institution; satisfy the Committee on Graduate

* A unit represents a year's study in a secondary school subject, including in the aggregate not less than 120 sixty-minute periods of prepared classroom work.

Studies of his capacity for productive work in the discipline; and give evidence of preparation which, in the opinion of the Committee, is adequate for graduate study in the field selected.

Applicants who have significant deficiencies in their preparation for graduate study may undertake prescribed undergraduate programs to qualify for admission as graduate students in the School of Engineering.

In some cases such undergraduate study may be carried on in addition to a limited graduate program. In no case may the undergraduate courses fulfill any part of the requirements for the graduate degree.

FOR DEGREE CANDIDACY

Application for admission to candidacy for a Master's degree must be made in writing to the Committee on Graduate Studies. To be accepted the applicant must have (1) been accepted for graduate study, (2) satisfactorily completed nine semester hours of graduate courses, and (3) give evidence of satisfactory personal and intellectual qualifications. In exceptional cases the requirement of nine semester hours of graduate courses may be reduced.

THE SCHOOL OF PHARMACY

For the Bachelor's Degree

Bachelor of Science in Pharmacy.—An Associate in Arts degree based on the curriculum in Pharmacy in the Junior College (see page 72), or the equivalent, is required.

A student who has received a Bachelor's degree from an accredited institution or who has completed work in the general cultural or foundational subjects of the pharmacy curriculum may be admitted to advanced standing. No more than one year of advanced standing will be granted a student from any institution other than an accredited college of pharmacy.

For the Master's Degree

Master of Science in Pharmacy.—A Bachelor of Science degree from an accredited institution is required. A superior record and professional promise are essential.

THE SCHOOL OF EDUCATION

For the Bachelor's Degrees

Bachelor of Arts in Education, Bachelor of Science in Home Economics, Bachelor of Science in Physical Education.—An Associate in Arts degree based on the Education, Home Economics, or Physical Education curriculum in the Junior College (see pages 72-74), or the equivalent from another accredited higher institution, or a certificate of gradu-

ation from an approved normal school or the equivalent is required. With the exception of Home Economics, applicants must be in possession of personality traits that give promise of success as a teacher.

For the Master's Degree

Master of Arts in Education.—To be admitted to candidacy for the degree of Master of Arts in Education the applicant must: (1) hold a Bachelor's degree from an accredited institution; (2) have an undergraduate quality-point index of 2.50 or above (C+ average); (3) have demonstrated a genuine interest in teaching; (4) be in possession of personality traits that give promise of better-than-average success as a teacher.

To be admitted to candidacy in programs designed to prepare for service in guidance and administration two years of successful teaching experience are prerequisite.

For the Advanced Professional Certificate

Advanced Professional Certificate.—The Bachelor of Arts degree in Education or the Bachelor of Science degree in Physical Education from the School of Education, or the equivalent from another institution of higher learning; a Master's degree, from an accredited institution of higher learning, at least two years of successful teaching experience, and a permanent teaching or administrative license are required.

For the Doctor's Degree

Doctor of Education.—The degree of Master of Arts in Education, or the equivalent, and at least three years of satisfactory educational experience are required.

THE SCHOOL OF GOVERNMENT

For the Bachelor's Degree

Bachelor of Arts in Government.—An Associate in Arts degree based on the *Foreign Affairs, Public Affairs, Accounting, Business Administration, or Business and Economic Statistics* curriculum in the Junior College (see pages 74-75), or the equivalent, is required.

For the Master's Degrees

A Bachelor's degree from an accredited college or university is required. A student from an unaccredited institution may be admitted at the discretion of the Committee on Admission and Advanced Standing, but will be required to take such extra work above the minimum requirements as may be prescribed.

A student admitted to candidacy must have attained a quality-point index of 3.00 (a *B* average) in his undergraduate major. An applicant whose scholastic average is below 3.00 in his major, or who lacks prerequisite courses, may be referred to the Division of Special Students to make up the deficiency.

Master of Arts in Government.—The applicant's undergraduate program must have included prerequisite courses, corresponding to an undergraduate major at this University, for the chosen field of graduate study.

Master of Arts in Public Administration.—An undergraduate major in a social science or equivalent work experience is required.

Master of Arts in Personnel Administration.—An undergraduate major in a social science or education, with the appropriate courses in psychology, is required.

Master of Business Administration.—An acceptable undergraduate major in Business Administration, or the equivalent, is required. Applicants who are deficient in such course work may be admitted and will be required to make up deficiencies over and above the normal Master of Business Administration program.

For the Doctor's Degree

Doctor of Business Administration.—A Master's degree in Business Administration or a related field, or the equivalent, and proficiency in statistics and accounting to the satisfaction of the Committee on Doctoral Studies are required.

THE COLLEGE OF GENERAL STUDIES

For information concerning the College of General Studies see pages 210-14.

THE DIVISION OF UNIVERSITY STUDENTS

Students 21 years of age or over who are not interested in working for a degree in this University may be considered for admission to the Division of University Students to take courses for which they have adequate preparation, as evidenced by previous scholastic records.

Students under 21 years of age who meet the entrance requirements of the Junior College but who are not seeking degree candidacy at this University may be admitted to the Division of University Students to pursue programs of study approved by the Dean.

If a student currently or previously registered in the Division of University Students applies for admission to degree candidacy, a maximum of 45 semester hours of credit will be considered for assignment, in so far as these credits are appropriate toward the degree sought.

In special instances, with the permission of the instructor, a person

may be considered for admission as an auditor in a class without being required to take active part in the exercises or to pass examinations, but no credit will be allowed for such attendance.

THE DIVISION OF SPECIAL STUDENTS

This is a non degree-granting division of the University in which the Director of Admissions may authorize the placement of students in the process of making up entrance deficiencies to degree-granting colleges and schools of the University.

Complete credentials must be submitted and evaluated before a tentative or definite plan of make-up may be prepared.

THE DIVISION OF AIR SCIENCE

The applicant must be a regularly enrolled, full-time, student; at least fourteen years of age; a citizen of the United States; physically fit; of good character; and a candidate for a Bachelor's degree.

CLASSIFICATION OF STUDENTS

Regular Students.—Regular students are those who have met the entrance requirements for candidacy and are registered for degrees.

University Students.—Persons not seeking degrees, as specified in the rules of the Division of University Students, may be admitted to this Division to pursue courses for which they have had adequate preparation.

Special Students.—Special students are those who are in the process of qualifying for admission to curricula in degree-granting colleges and schools of this University.

Additional information concerning curricula, courses offered, entrance requirements, or admission procedure may be obtained from the Office of the Director of Admissions.

REGISTRATION

Before a student may be admitted to registration he must have satisfied the Office of the Director of Admissions that he is qualified to enter the University (see "Admission", pages 13-24).

A student who has previously matriculated in the University, but who has not been in attendance during the semester prior to registration, should file an application for readmission in advance of registration.

Registration is for the semester unless otherwise indicated on the registration paper. No registration is accepted for less than a semester or one summer session.

A student may not register concurrently in The George Washington University and another institution without the permission of the dean of the college, school, or division in which he is registered in The George Washington University. Allowance of credit for work done concurrently will be at the discretion of the appropriate Committee on Admission and Advanced Standing.

TIME AND PLACE OF REGISTRATION

Registration for all colleges, schools, and divisions except as noted below is conducted in Building C, 2029 G Street NW., between 9:00 A.M. and 7:00 P.M., during the following periods: *fall semester*, September 17 and 18; *spring semester*, January 28 and 29.

For the Law School: Stockton Hall, 720 Twentieth Street NW., between 9:00 A.M. and 7:00 P.M.: *fall semester*, September 17 and 18; *spring semester*, January 28 and 29.

For the School of Medicine: School of Medicine, 1335 H Street NW., between 9:00 A.M. and 4:00 P.M., September 10.

For the College of General Studies: at times and places designated in individual course announcements.

REGISTRATION CHANGES AND WITHDRAWALS

For regulations governing changes in registrations and withdrawals, see pages 27, 29, 51-53.

FEES AND FINANCIAL REGULATIONS

By authorization of the Board of Trustees, the following fees have been adopted, effective September 1, 1959:

TUITION FEES

For each semester hour* for which the student registers (except for work in the Law School, for courses in Departments of Instruction in the School of Engineering, for courses in the College of General Studies Off-Campus Division, for work toward a Master's degree in Engineering, and for work taken by a candidate for a Doctor's degree)	\$22.00
For each semester hour for which the student registers in the Law School	23.00
For each semester hour for which the student registers for courses in Departments of Instruction in the School of Engineering.....	24.00
For the degree of Doctor of Medicine, for two semesters†.....	1,000.00
For the degree of Doctor of Philosophy, Doctor of Education, or Doctor of Business Administration:	
For work‡ leading to and including the Council Fellowship or General examination§	660.00
For work leading to and including the final examination§.....	660.00
For the degree of Doctor of Juridical Science:	
For work leading to and including the final examination§.....	660.00
For the degree of Master of Engineering Administration:	
For work leading to and including the Comprehensive Examination§	700.00
For the degree of Master of Science in Engineering:	
For work leading to and including the Comprehensive Examination§	800.00
For the degree of Doctor of Science:	
For work leading to and including the Qualifying Examination... ..	1,200.00
For work leading to and including the final examination.....	1,200.00

ADDITIONAL COURSE FEES

In certain courses additional fees, such as laboratory and material fees, are charged as indicated in the course descriptions. These fees are charged by the semester and, unless otherwise indicated, may be defrayed in three payments when the tuition is paid in this manner. Breakage of apparatus is charged against the individual student. When breakage is in excess of the normal amount provided for in the laboratory fee the individual student will be required to pay such additional charges as are determined by the department concerned.

* Payment of tuition for a Master's thesis entitles the candidate, during the academic year of registration, to the advice and direction of the member of the faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year may be granted without further tuition payment. The student must, however, be registered "in residence" during this period. If the preparation of the thesis extends beyond the second academic year, it must be registered for again, and tuition paid on the same basis as for a repeated course.

† Registration in the School of Medicine is for a period of two semesters. After the student has entered the course of instruction he is obligated for the full tuition for two semesters. No part of the tuition will be refunded upon withdrawal or dismissal for any cause.

‡ This fee does not cover the cost of tuition for elementary courses (numbered 1 to 100).

§ When a limited schedule is carried which extends the time of completion of the program of study to more than one year, the proportionate part of the charge may be fixed by the Treasurer.

GRADUATION FEES

Wherein the degree of Associate in Arts or Associate in Science is granted	\$10.00
Wherein a degree other than the Associate in Arts or Associate in Science degree is granted.....	25.00
Wherein an Advanced Professional Certificate in Education is granted	25.00
FEE FOR BINDING MASTER'S THESIS.....	6.00
FEE FOR PRINTING SUMMARY OF DOCTORAL DISSERTATION.....	85.00

SPECIAL FEES

Application fee, charged each applicant for admission as a degree candidate, nonrefundable	10.00
Application fee, charged each applicant for admission as a nondegree candidate, nonrefundable	5.00
Application for Transfer fee, charged* each applicant for transfer within the University from one college, school, or division to another, except in cases of normal progression, nonrefundable.....	5.00
Admission tests (when required):	
For all colleges, schools, and divisions except the School of Engineering	6.00
For the School of Engineering.....	7.50-10.00
Graduate Record Examination fee (to cover two examinations), charged each candidate for a Bachelor's degree in Columbian College, the School of Engineering, or the School of Government at the time of registration for the final semester of study (excluding summer sessions)	7.00
Late-registration fee, charged each student who fails to register within the designated period.....	5.00
Change fee, charged each student for each change in program involving one course or more than one course.....	2.00
Withdrawal fee, charged each student who preregisters and withdraws prior to the regular registration.....	5.00
Service fee, charged each student for late payment of tuition (see "Payment of Fees").....	2.00
Reinstatement fee, charged each student who is reinstated after suspension for delinquency in fees.....	5.00
Residence fee, charged each student granted "leave of absence" status for the academic year in the School of Medicine.....	50.00
Residence fee, charged each student wishing to maintain "in residence" status during any semester of absence from the University or after completion of tuition requirements:	
In the Law School.....	23.00
In the School of Engineering†.....	24.00
In all other colleges, schools, and divisions.....	21.00
For special physical examination.....	2.00
Special fee, Law School (\$1.25. Student Bar Association activities; \$1.75, Law Review), charged each student in the Law School for each semester or any part thereof except the summer term...	3.00
Engineers' Council fee, charged each student in the School of Engi-	

* Payable at the time of application for transfer or readmission.

† Candidates for the Master's degrees in the School of Engineering who have paid in full the fee for work leading to and including the Comprehensive Examination but whose Comprehensive Examinations have not been completed will be granted one semester without payment of residence fee.

neering for each semester or any part thereof except the summer term	1.50
For each examination to qualify for advanced standing and for each special examination	5.00
Laboratory checkout fee, charged each student in chemistry and pharmacy courses who fails to check out of the laboratory by the time set by the instructor.....	3.00
Transcript fee, charged for each transcript of record after the first..	1.00

Registration in the University entitles each student to the following University privileges: (1) the issuance of one certified transcript of record, if and when desired; (2) the services of the Placement Office; (3) the use of University library facilities, except as otherwise designated; (4) gymnasium privileges; (5) admission to all athletic contests, unless otherwise specified; (6) subscription to the *University Hatchet*, the student newspaper; (7) admission to University debates; (8) medical attention and hospital services as described under Health Administration, pages 225-26. These privileges, with the exception of the issuance of transcripts, terminate, and a student is no longer in residence, when he withdraws or is dismissed from the University.

PAYMENT OF FEES

All fees are payable at the Office of the Cashier, 725 Twenty-first Street NW. No student is permitted to complete registration or to attend classes until all fees are paid. Fees for each semester are due and payable in advance at the time of registration.

In exceptional cases, subject to the approval of the Treasurer, the student may sign a contract for semester charges, except for fees payable in advance, permitting payments as follows:

Fall Semester.—One-third at the time of registration; one-third on November 2; one-third on December 1.

Spring Semester.—One-third at the time of registration; one-third on March 1; one-third on April 1.

Arrangements for the above may be made with the Office of the Cashier at the time of registration.

A student who fails to meet payments when due, but who pays his fees from the fourth to the fifteenth, inclusive, of the month in which payment is due, is charged a service fee of \$2. A student who fails to meet payments by the fifteenth of the month in which payment is due will be automatically suspended and may not attend classes until he has been officially reinstated and has paid all accrued fees and a reinstatement fee of \$5.

A student suspended for failure to meet payments when due may not be reinstated for the semester after two weeks from the date of suspension. Applications for reinstatement are to be made to the Office of the Cashier.

An auditor pays all fees chargeable to the student registered for credit except the late-registration fee.

WITHDRAWALS AND REFUNDS

Applications for withdrawal from the University or for change in class schedule must be made in person or in writing to the dean of the college, school, or division in which the student is registered. Notification to an instructor is not an acceptable notice (see "Withdrawal", pages 51-52).

In authorized withdrawals and changes in schedules, financial adjustments will be made as follows:

Fall Semester.—Withdrawal dated on or before October 30, cancellation of two-thirds of tuition charges; withdrawal dated on or before November 30, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to November 30.

Spring Semester.—Withdrawal dated on or before February 29, cancellation of two-thirds of tuition charges; withdrawal dated on or before March 31, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to March 31.

In no case will a refund be made of the first third of the total tuition charges unless the registration is in advance and is cancelled before the regular registration day. In this case a withdrawal fee of \$5 is charged and tuition fees refunded. In no case will tuition be reduced or refunded because of nonattendance upon classes.

Payment applies only to the semester for which a registration charge is incurred and in no case will this payment be credited to another semester.

Any student in chemistry or pharmacy who fails to check out of the laboratory on or before the date set by the instructor, unless excused by the instructor, will be charged a checkout fee in the amount of \$3. A student who drops a course before the end of the semester must check out of the laboratory at the next regular laboratory period.

Any student enrolled in the Air Force ROTC who fails to turn in uniforms, equipment, and textbooks, on separation from the Corps, will be charged the value of the missing items.

Authorization to withdraw and certification for work done will not be given a student who has not a clear financial record.

FELLOWSHIPS, SCHOLARSHIPS, PRIZES, FINANCIAL AID

FELLOWSHIPS AND GRADUATE ASSISTANTSHIPS

The following fellowships and graduate assistantships are available. Unless otherwise specified, applications should be submitted not later than April 1 preceding the period for which the award is to be made.

University Teaching Fellowships.—These are assigned for the academic year to the various departments of instruction. The applicant is expected to be a prospective candidate for a Doctoral degree in the general field of his future doctoral study. Each Teaching Fellow receives an annual stipend (on a nine-month basis) of up to \$1,700 plus full tuition for whatever schedule of study or research his fellowship duties permit him to carry. Stipends vary with the work load of the individual Teaching Fellow. Normally a University Teaching Fellow renders half-time service in classroom or laboratory assignments to the department of instruction directing his doctoral study. Application should be made to the executive officer of the department of instruction concerned.

Graduate Teaching Assistantships.—These are open in various departments of instruction to candidates for the Master's degrees. Each graduate teaching assistant renders a designated unit of service to his major department of instruction, and receives, depending upon his teaching or laboratory assignment, up to \$1,700 on a nine-month basis plus tuition for the program of studies which the duties of his assistantship permit him to carry. Application should be made to the executive officer of the department of instruction concerned.

Law School Research Assistantships.—Student research assistantships are available each year to students currently enrolled in the Law School, preference being given to applicants who are completing their second year. Each assistant receives an annual stipend. Awards are made on the basis of academic standing, financial need, and capacity for leadership. Research assistants have duties similar to those of teaching fellows. Applications should be submitted to the Dean of the Law School not later than May 1.

Law School Teaching Fellowships.—Teaching fellowships are available each year in the Law School to prospective candidates for the Master of Laws degree. Each fellow receives an annual stipend, plus tuition for the academic year. Teaching fellows follow an approved program of study and research, assist members of the Faculty in the guidance of first-year students, and supervise student work in legal bibliography and the drafting of legal instruments. Upon satisfactory completion of the

year's work, a fellow is recommended for the degree of Master of Laws. Applications should be submitted to the Dean of the Law School not later than March 1.

SPECIAL FELLOWSHIPS

The following Special Fellowships, supported by endowment, are available. Inquiry concerning them should be addressed to the executive officer of the department concerned.

Isabella Osborn King Research Fellowships.—Fellowships varying in amount from \$750 to \$3,000, established in 1927 by bequest of Mrs. Isabella Osborn King, are offered in the biological sciences and are intended to foster research for which the libraries and scientific establishments in Washington provide special facilities.

Robin Miller Research Fellowship.—A fellowship in medicine in the amount of \$1,800, established in 1953 by bequest of Mrs. Robin Miller, is offered for the study of cardiovascular diseases.

Thomas Bradford Sanders Fellowships.—Fellowships varying in amount from \$900 to \$1,500 plus tuition, established in 1928 by bequest of Miss Addie Sanders in memory of her brother, Thomas Bradford Sanders, are offered in various departments of science.

The following Special Fellowships are made possible by annual gifts.

Scottish Rite Fellowships.—The Ancient and Accepted Scottish Rite of Freemasonry, Southern Jurisdiction, U.S.A., Orients of Alabama, Arizona, Colorado, Kansas, Maryland, Minnesota, Mississippi, Nebraska, Nevada, New Mexico, North Carolina, Oregon, South Dakota, Texas, Washington, West Virginia, and Wyoming offer one fellowship each in the amount of \$1,800 to graduates of accredited colleges who wish to enroll in the School of Government to train for government leadership—federal, state, or local. The Orient of Montana has established two fellowships; the Orient of Florida has established three fellowships; and the Orient of Louisiana has established six fellowships. One fellowship in the amount of \$1,700 has been established in the Orient of California. The above fellowships are available to residents of the respective states, and application therefore should be made to the Sovereign Grand Inspector General of the Supreme Council, 33°, of the Southern Jurisdiction, U.S.A., of the Orient (state) from which the application is to be made.

SCHOLARSHIPS

Scholarships are awarded for the academic year unless otherwise specified and are credited in equal parts for each semester. Each holder must carry a full schedule of academic work (fifteen semester hours or in the professional schools the full prescribed schedule) during the period for

which the scholarship is awarded. Applicants* must have established an academic record in courses at this institution, and should apply on prescribed forms which must be filed in the Office of the Chairman of the Committee on Scholarships not later than April 1 preceding the academic year for which the scholarship is to be awarded. Further information may be obtained from the Chairman of the Committee on Scholarships.

Alpha Zeta Omega Scholarship.—This scholarship, in the amount of \$500, was established by Pi Chapter of Alpha Zeta Omega Pharmaceutical Fraternity. It is awarded annually to a member of the graduating class of one of the public high schools of the District of Columbia and nearby Maryland and Virginia who intends to enroll in the pharmacy curriculum and complete the requirements for the degree of Bachelor of Science in Pharmacy.

Alumni Scholarships.—Five scholarships are available each year in the Junior College, upon the recommendation of regional alumni clubs, to outstanding men graduating from accredited high schools. The scholarships cover tuition costs for four semesters (beginning with the fall semester) of full-time work but do not include special fees such as laboratory charges, room, board, or other expenses. To retain the scholarship, the student must maintain a B average. Additional information may be obtained from the Director of Alumni Relations.

American Foundation for Pharmaceutical Education Scholarship.—A scholarship fund, in the amount of \$400, established by the American Foundation for Pharmaceutical Education, is available annually to junior and senior students of the School of Pharmacy who are in the upper quarter of their class or who are maintaining average grades of not less than B. The scholarship funds are awarded on the recommendation of the Committee on Scholarship of the School of Pharmacy.

American Society of Women Accountants.—This scholarship, in the amount of \$100, established in 1953 by the District of Columbia Chapter of the American Society of Women Accountants, is available to a sophomore, junior, senior, or postgraduate woman majoring in accounting whose academic record is good and who needs aid in continuing her education.

Byron Andrews Scholarship.—This scholarship, in the amount of \$300, established in 1920 by Mrs. Belle Fisk Andrews in memory of her husband, Byron Andrews, is available "for ambitious and needy students,

* Except in the case of the Alpha Zeta Omega Scholarship, the Alumni Scholarships, Association of Federal Communications Consulting Engineers Scholarship, Capital Farm and Garden Scholarship, the Crown Photo Scholarship, the D. C. Pharmaceutical Association Scholarship, the Estella Constance Drane Scholarship, the School of Engineering Scholarships, General Motors College Scholarship, Grants-in-Aid Scholarships, the High School Scholarships, the Kappa Alpha Theta Scholarship, the Law School Scholarships, the Eugene and Arnes E. Meyer Scholarships, the National League of Masonry Clubs Scholarship, Levin M. Powell Scholarship, the John O. Rankin Scholarship, the Student Activities Scholarships, and the Texaco Scholarship.

who desire to pursue courses in English, Latin, journalism, history, literature, or political science".

Association of Federal Communications Consulting Engineers Scholarship.—This scholarship, in the amount of \$520, established in 1958 by the Association of Federal Communications Consulting Engineers (AFCCE), is available to a student of good character, promise, and leadership pursuing a course of study leading to a Bachelor of Electrical Engineering degree and intending to major in communications.

Anna Bartsch Scholarship.—This scholarship, in the amount of \$500, established in 1946 by Dr. Anna Bartsch-Dunne, as a memorial to her mother, Anna Bartsch, is available to a woman in the School of Medicine, "of outstanding scholarship, character, and promise, who intends to make the practice of medicine her life profession". The award is made upon the recommendation of the Faculty of the School of Medicine.

Everett Lamont Bradley Scholarship.—This scholarship, in the amount of \$175, established in 1954 by bequest of Alice R. H. Bradley in memory of her son, Everett Lamont Bradley, is available to a student in the School of Medicine.

Capital Farm and Garden Scholarship.—This scholarship, in the amount of \$400, established in 1958 by the Woman's National Farm and Garden Association, Inc., is available to an outstanding girl student from the District of Columbia in the field of home economics and related fields.

Emma K. Carr Scholarships.—Four scholarships in the amount of \$400 each and ten of \$100 each, established in 1932 by Mrs. Emma K. Carr, are available to "young men (of the white race) for undergraduate or postgraduate work, considering character, capacity, and need".

Henry Harding Carter Scholarship.—This scholarship, in the amount of \$500, established in 1896 by Mrs. Maria M. Carter in memory of her husband, Henry Harding Carter, is available to a deserving student who is preparing for the civil engineering profession.

Maria M. Carter Scholarship.—This scholarship, in the amount of \$50, established in 1871 by Mrs. Maria M. Carter, is available to a young man.

Crown Photo Scholarship.—This scholarship, in the amount of \$500, established in 1958 by the Crown Photo Service of Washington, D. C., is to be awarded annually to a member of the graduating class of one of the public high schools of the District of Columbia, nearby Maryland, or Virginia, who intends to enroll in the pharmacy curriculum and complete the requirements for the degree of Bachelor of Science in Pharmacy.

Daughters of the American Revolution Scholarship.—This scholarship, in the amount of \$475, established in 1952 by the District of Columbia Daughters of the American Revolution, is available to junior and senior

students, preferably women, who are descendants of patriots of the American Revolution.

Isaac Davis Scholarship.—This scholarship, in the amount of \$50, was established in 1869 by the Honorable Isaac Davis of Massachusetts. Nominations for the scholarship may be made "by the founder or his eldest lineal descendant". In case no such nomination is made, the scholarship is to be awarded by the University.

District of Columbia Pharmaceutical Association Scholarship.—This scholarship, in the amount of \$500, was established in 1954. It is awarded annually to a member of the graduating class of one of the public or parochial high schools of the District of Columbia and nearby Maryland and Virginia who intends to enroll in the pharmacy curriculum and complete the requirements for the degree of Bachelor of Science in Pharmacy.

Charles Worthington Dorsey Memorial Scholarship.—This scholarship, established in 1947 as a memorial to Charles Worthington Dorsey, Bachelor of Laws, '81, Master of Laws, '82, is awarded upon the recommendation of the Faculty of the Law School to a needy and promising graduate of Columbian College or other division of the University, with a Bachelor of Arts or other equivalent degree, who has maintained an average of *B* as an undergraduate student and who desires to pursue the study of law as a full-time student. The scholarship covers tuition for the course leading to the first degree from the Law School, Bachelor of Laws or Juris Doctor, provided that the holder maintains an average of *B*. The right is reserved to suspend the benefits of the scholarship for cause at any time. This scholarship is awarded ordinarily once every three years.

Estella Constance Drane Scholarship.—This scholarship in the amount of \$200, established in 1957 by bequest of Estella Constance Drane in memory of the boys of the former Washington Business High School who served in World War I, is available annually to a graduate of Roosevelt High School upon the recommendation of the Scholarship and Award Committee of the faculty of Roosevelt High School and the approval of the Committee on Scholarships of The George Washington University.

School of Engineering Scholarships.—Four scholarships are available each year in the School of Engineering to graduates of accredited secondary schools. The holders of these scholarships must carry a full program in the School of Engineering.

Each scholarship is a full-tuition scholarship but does not cover special fees. Each scholarship is for four academic years (summer work is not to be included), provided the holder thereof meets all academic and other standards of the University.

To retain a School of Engineering scholarship, an average of *B* and a satisfactory standard of deportment must be maintained. In case a stu-

dent marries after the award is made, the scholarship is forfeited. If for any reason a holder of a School of Engineering scholarship resigns or is dropped from said scholarship, the scholarship remains unfilled.

Henry Parsons Erwin Scholarship.—This scholarship, in the amount of \$300, established in 1955 by Mrs. Helen B. Erwin as a memorial to her husband, Henry Parsons Erwin, a former Trustee of the University, is available for a student in Engineering.

Robert Farnham Scholarship.—This scholarship, in the amount of \$100, given to the University in 1871 by Mrs. Robert Farnham, is available to a student in Columbian College.

Esther Brigham Fisher Scholarship.—This scholarship in the amount of \$75, established in 1951 by the bequest of Mrs. Esther Brigham Fisher, is available to a student in the University.

General Motors College Scholarship.—This scholarship, established in 1955 by General Motors Corporation, is available for an incoming freshman student who is a citizen of the United States and demonstrates outstanding talent, high personal qualifications, and financial need. The amount of the award has been made flexible and will range from an honorary award of \$200, up to an award of \$2,000 per year, depending upon the demonstrated need of the individual. It is renewable for the four years of undergraduate work provided the student continues to meet the high standards established for the holder of this award.

Georgetown Business and Professional Women's Club Scholarship.—This scholarship, in the amount of \$100, established in 1958 by the Georgetown Business and Professional Women's Club, is available to a woman student in the field of Science.

Grants-in-Aid Scholarships.—The University has established a limited number of Grants-in-Aid Scholarships for men and women which are awarded annually by the University Committee on Scholarships. These grants are designed to promote the physical, mental, moral, and educational leadership of worthy young men and women. Such aid in no instance shall exceed the amount of institutional expenses.

Anna Spicker Hampel Scholarship.—This scholarship, in the amount of \$35, established in 1949 by Mrs. Evelyn Hampel Young, is available for scholarship aid to young married women students in the School of Education or Columbian College.

Elma Lewis Harvey Scholarship.—This scholarship of \$200 was founded in 1921 by Mrs. Emma Elizabeth Harvey in memory of her daughter, and is awarded every four years, or as often as vacant, to a young woman in Columbian College of the Protestant faith and the Caucasian race who shall be selected for scholarship and moral qualifications.

Hazelton Scholarship.—This scholarship, in the amount of \$275, estab-

lished in 1950 by the bequest of Lillie S. Hazelton, is awarded annually "for the use and assistance of needy and worthy students."

High School Scholarships.—The Board of Trustees of the University offers thirty-four scholarships to graduates of public high schools in the Washington Metropolitan Area: sixteen in the District of Columbia area; four each in the Montgomery, Prince Georges, Arlington, and Fairfax areas; and two in the Alexandria city area, the home city of General George Washington. Scholarships are divided equally between men and women. One of the District of Columbia Scholarships, designated as the *Amos Kendall Scholarship*, was established in 1869 by the late Honorable Amos Kendall.

Each scholarship is awarded annually to a member of the graduating class who plans to enroll in the Junior College for the freshman and sophomore years and thereafter in Columbian College or any one of the professional schools announcing a preprofessional curriculum in the Junior College. The scholar must register the following September and carry each semester a full academic program as prescribed in the Junior College curricula or in the college or school in which he carries his upper division work; in no case is the scholar permitted to carry less than fifteen semester hours.

Each scholarship is a full-tuition scholarship but does not cover special fees. Each scholarship is for four academic years (summer work is not to be included), provided the holder thereof meets all academic and other standards of the University.

To retain a high school scholarship, an average of *B* and a satisfactory standard of deportment must be maintained. In case a student marries after the award is made, the scholarship is forfeited. If for any reason a holder of a high school scholarship resigns or is dropped from said scholarship, the scholarship remains unfilled.

High School Discussion Conference Scholarships.—Three scholarships are available each year in the Junior College to high school seniors who participate in the George Washington University High School Discussion Program. These scholarships cover tuition for one year, but do not include laboratory fees or other special fees. For information concerning application, consult the Department of Speech.

Kappa Alpha Theta Scholarship.—This scholarship, in the amount of \$500, established by the Washington alumnae of Kappa Alpha Theta, is available for the training of a clinician in speech correction.

Kappa Psi Scholarship.—This scholarship, in the amount of \$150, is made available by Gamma Tau Chapter and the District of Columbia Graduate Chapter of Kappa Psi Pharmaceutical Fraternity. It is awarded annually to a student in the School of Pharmacy who is in need of financial aid.

Law School Scholarships.—Scholarships are available each year in the

Law School to graduates of accredited colleges. Each scholarship provides full three-year tuition in the morning division of the Law School. Candidates must have graduated in the upper fifth of their class and must have demonstrated qualities of leadership in addition to scholastic attainment. To retain the scholarship, the successful candidate must maintain a *B* average. Application must be made before March 1 to the Dean of the Law School.

Eugene and Agnes E. Meyer Scholarships.—A scholarship fund, in the amount of \$3,500, established in 1952 by the Eugene and Agnes E. Meyer Foundation, is available annually "to assist promising students or applicants in meeting the costs of furthering their education, with preferential consideration to children of persons who are employed in public service, including service in the armed forces or the judiciary."

A. Morehouse Scholarship.—This scholarship was established by Mr. A. Morehouse in 1861. It carries an annual stipend of \$60, which is available for an undergraduate "intending to enter the Christian ministry".

The National League of Masonic Clubs Scholarship.—This scholarship, in the amount of \$500 annually to be applied toward payment of tuition costs only, is offered by the National League of Masonic Clubs. It is awarded every four years, or as often as vacant, to the son or daughter of a Master Mason who is a member of a Masonic Club affiliated with the National League of Masonic Clubs. To continue to hold this scholarship, the student must maintain a satisfactory academic record.

Newspaper Scholarships.—One scholarship is available each year to a candidate recommended by each of the following newspapers: *The Washington Daily News*, *The Washington Post and Times Herald*, and *The Evening Star*. The holder of the scholarship must be an employee of the newspaper. These scholarships are valid for four academic years, provided the holder continues in the employ and is recommended by the newspaper, and maintains a satisfactory academic record and a high standard of deportment. They cover tuition but do not include laboratory fees, graduation fees, or other special fees.

Panhellenic Association of Washington, D. C., Scholarship.—A scholarship, in the amount of \$200 to be applied to tuition fees, has been established by the Panhellenic Association of Washington, D. C. This scholarship is available annually to a woman student in her sophomore or junior year, who is a member of a National Panhellenic Conference sorority, has done the most to promote good social relations among the sororities on the campus, is an outstanding leader in student affairs sponsored by the University, and has a 3.0 (*B*) or better average.

Paul Pearson Scholarship.—This scholarship, in the amount of \$200, established in 1940 by bequest of Paul Pearson and "to be known as the Dr. Paul Pearson award," is available to a student in the School of Pharmacy, upon the recommendation of the Faculty of that School.

Phi Delta Delta Scholarship.—Zeta Chapter of Phi Delta Delta Legal Fraternity (International) offers annually a scholarship in the amount of \$40 to the woman student in the sophomore class who has excelled in scholastic achievement and service to the Law School in her first year.

Phi Delta Gamma Scholarship.—This scholarship, established in 1956 by Beta Chapter of Phi Delta Gamma, in the amount of \$100, is awarded annually to a woman who is a candidate for an advanced degree at the University.

Levin M. Powell Scholarships.—These full tuition scholarships, established by the bequest of Admiral Levin M. Powell in 1886, are available to young men desiring to prepare for entrance into the Naval Academy at Annapolis, Maryland. The number of scholarships awarded each year will be determined by the income from the endowment.

John O. Rankin Scholarship.—This scholarship, established in October 1951, in recognition of Mr. Rankin's bequest to the University, is to be awarded to a resident of Pemiscot County, Missouri, upon the recommendation of the Caruthersville Rotary Club and the Hayti Lions Club in this County. The scholarship covers tuition costs for the four-year curriculum in Foreign Affairs, but it does not include laboratory fees, graduation fees, or other special fees. To retain the scholarship, the recipient must carry a full program and maintain an average of B. The scholarship is awarded every four years or as often as vacant. Further information may be obtained from the Chairman of the Committee on Scholarships.

Lula M. Shepard Scholarships.—Two scholarships, in the amount of \$400 and \$150, respectively, established in 1946 by bequest of Lula M. Shepard, are available to "worthy Protestant students desiring to enter the Foreign Service Department of the School of Government".

David Spencer Scholarship.—This scholarship of \$175, established in 1918 by Miss Louisa J. Spencer, is available under certain restrictions.

Mary Lowell Stone Scholarship.—This memorial scholarship, in the amount of \$150, established in 1893, is available to a woman student of science in Columbian College.

Charles Clinton Swisher Scholarships.—These scholarships, in the amount of \$450 and \$300, respectively, established in 1941 by bequest of Professor Charles Clinton Swisher, are available, under certain conditions, to students of medieval history.

Texaco Scholarship.—This scholarship, established in 1956 by the Texas Company, covers tuition, fees, and textbooks, and is awarded annually to a young man entering the freshman class in a curriculum which will prepare him for a career in the petroleum industry. It is renewable for the four years of undergraduate work provided the student maintains high standards of scholarship and deportment.

University Hospital Scholarships in Medical Technology.—Ten scholar-

ships are available, each to cover the cost of 24 semester hours of the 30 in the last year of the curriculum leading to the degree of Bachelor of Science in Medical Technology.

William Walker Scholarship.—This scholarship, established in 1824 by William Walker, Esq., carries an annual stipend of \$125, which is available for an undergraduate intending to enter the Christian ministry.

John Withington Scholarship.—This scholarship of \$100, was established in 1830 by the New York Baptist Theological Seminary.

Wolcott Foundation Scholarships in the Field of Foreign Affairs.—Scholarships sponsored by the Wolcott Scholarship Foundation of High Twelve International, Inc., are available to graduates of accredited colleges who wish to enroll in the School of Government for graduate work in foreign affairs. Preference is given to students who themselves are affiliated with, or whose parents are affiliated with, High Twelve International or the Masonic Order. The scholarships cover tuition for one year of graduate study in residence.

Women's Advertising Club of Washington Scholarship.—This scholarship, in the amount of \$300, established in 1958 by the Women's Advertising Club of Washington, is available each year to a woman entering her junior or senior year in advertising and public relations.

Ellen Woodhull Scholarship.—This scholarship of \$40, established by Ellen M. E. Woodhull, is available to a student in Columbian College.

The Zonta Club of Washington, D. C., Scholarship.—This Scholarship, in the amount of \$300, offered by the Zonta Club of Washington, D. C., is available to a woman who is a junior, senior, or graduate student with special interest in a professional or business career.

THE COLUMBIAN WOMEN SCHOLARSHIP FUNDS

The Columbian Women Scholarships are awarded to women students by the Scholarship Committee of Columbian Women. The awards are based on financial need and scholastic attainment. Applications for these scholarships should be addressed to the chairman of the Scholarship Committee, Columbian Women, The George Washington University, Washington 6, D. C., not later than May 15 for the Fall Semester, and not later than January 1 for the Spring Semester.

Nellie Maynard Knapp Scholarship Fund.—The income from this fund of \$5,000, established in 1915 in memory of a former president, Mrs. Martin A. Knapp, is available for scholarships for women.

Founders of Columbian Women Scholarship Fund.—The income from this fund of \$5,000, established in 1920, is available for scholarships.

Lillian Young Herron Scholarship Fund.—The income from this fund of \$5,000, established in 1925 and named in 1930 in memory of a former president, is available for scholarships.

Elizabeth V. Brown Scholarship Fund.—This fund of \$1,200, was es-

established in 1925 by the College Women's Club of Washington, D. C., in memory of the late Elizabeth V. Brown. The income is available for a scholarship for a woman student in the School of Education.

College Women's Scholarship Fund.—The income from this fund of \$500, established in 1926 by the College Women's Club of Washington, D. C., is available for scholarship aid.

Lewes D. and Myrtie H. Wilson Memorial Scholarship Fund.—This fund of \$1,000 was established by Miss Elizabeth Wilson in 1926 as a memorial to her parents, Lewes D. and Myrtie H. Wilson. The income is available for a scholarship in the School of Medicine.

Grace Ross Chamberlin Scholarship Fund.—The income from this fund of \$2,300, established in 1932 in honor of a former president, is available for scholarship aid.

Janet McWilliam Scholarship Fund.—The income from this fund of \$1,000, established in 1954 in honor of a former president, is available for scholarship aid.

Rose Lees Hardy Foundation Scholarship Fund.—The income from this fund of \$2,000, established in 1957 in memory of Rose Lees Hardy, an alumna of the University, is available for scholarship aid.

PRIZES

Alpha Chi Sigma Prizes.—Alpha Pi Chapter of Alpha Chi Sigma Fraternity offers annually the following prizes:

A Handbook on Chemistry and Physics is awarded to each of the three students who carry at least eighteen semester hours during the freshman year and attain the highest averages in freshman chemistry.

The name and year of graduation of the student who has attained the highest quality-point index in courses in chemistry will be inscribed on a bronze plaque. The winner must have had at least sixteen hours of chemistry including the final semester at The George Washington University.

Alpha Delta Pi Prize.—Alpha Pi Chapter of Alpha Delta Pi Fraternity offers an annual prize of \$10 to the woman member of the junior class with the most outstanding record in scholarship, extracurricular activities, and service to the University.

Alpha Kappa Psi Prize.—Beta Mu Chapter of Alpha Kappa Psi Fraternity awards annually a key to the male student who has completed ninety semester hours at The George Washington University and has attained the highest average grade in economics, business administration, public accounting, public finance, and foreign commerce. The name of the winner and the year of the award will be engraved on a plaque in the office of the Dean of the School of Government.

Alpha Zeta Omega Prize.—The Ladies' Auxiliary, Pi Chapter, of the Alpha Zeta Omega Pharmaceutical Fraternity offers annually a copy of

The United States Dispensatory to the freshman student in pharmacy, who has completed at least fifteen semester hours in the University and who has attained the highest average in his courses.

American Institute of Chemists Prize.—The District of Columbia Chapter of the American Institute of Chemists offers an annual prize of a medal and a one-year subscription to *The Chemist* to that graduating student, majoring in chemistry, who excels in scholarship and in the personal qualities of integrity and leadership.

Byrne Thurtell Burns Memorial Prize.—This prize of \$55 is awarded to the senior majoring in chemistry who shows the greatest proficiency in organic chemistry, as evidenced by a comprehensive examination, and who possesses such qualifications of mind, character, and personality as to give promise of future achievement.

Martin L. Cannon Memorial Prize.—Pi Chapter of the Alpha Zeta Omega Pharmaceutical Fraternity offers annually a copy of *The United States Dispensatory*, in memory of Dr. Martin L. Cannon, to the student in pharmacy receiving his Associate in Arts degree, who throughout his course has obtained the highest grades and at the same time contributed most to the student activities in the School of Pharmacy.

Chi Omega Prize.—Phi Alpha Chapter of Chi Omega Fraternity offers annually a prize of \$25 to be awarded to the woman student in the graduating class with the highest record in the following social sciences: economics, sociology, political science, and history; combined with general excellence.

John Henry Cowles Prizes.—These prizes, founded in 1943 by John H. Cowles, Grand Commander of the Supreme Council of the Thirty-third Degree (Mother Council of the World) of the Ancient and Accepted Scottish Rite of Freemasonry, Southern Jurisdiction of the United States of America, are awarded annually to the best two scholars in the senior class of the School of Government. The prizes are as follows: first prize, \$100; second prize, \$65.

DeWitt Clinton Croissant Prize.—This prize of \$50, established by the late Professor DeWitt Clinton Croissant, is awarded annually to the undergraduate student who as a member of one of the University courses in drama or as a participant in University dramatics submits to the English Department the best essay on drama or the theatre.

E. K. Cutter Prize.—The E. K. Cutter Prize in English was established by the late Marion Kendall Cutter "for excellence in the study of English." An annual prize of \$55 is awarded to the member of the graduating class whose record in English, combined with general excellence, shows most marked aptitude for and attainment in English studies.

Isaac Davis Prizes.—These prizes, established by the Honorable Isaac Davis, of Massachusetts, in 1847, are awarded annually to such members of the senior class as shall have made the greatest progress in public

speaking during their connection with the University. The prizes are as follows: first prize, \$25; second prize, \$20; third prize, \$15.

The award of these three prizes is determined by a public-speaking contest in which the participants deliver original orations. Only members of the senior class who are candidates for the degree of Bachelor of Arts or Bachelor of Science are eligible to compete.

Delta Gamma Prize.—Beta Rho Chapter of Delta Gamma Fraternity offers annually a prize of \$10 to the woman member of the freshman class who at the end of that year has the most outstanding record in scholarship, extracurricular activities, and service to the University.

Delta Zeta Prize.—Delta Zeta Sorority offers annually a prize of \$10 to be awarded to the student maintaining the highest average in Zoology 1-2.

Elton Prize.—The Elton Prize of \$30, established by the Reverend Romeo Elton, of Exeter, England, is awarded annually to the student having the highest average in the most advanced course in the Greek language and literature.

Jesse Frederick Essary Prize in Journalism.—This memorial prize of \$200, established in 1948 by the late Helen Essary Murphy, is awarded annually to a student who has given promise of sound citizenship and who submits the best printed and published evidence of ability in "forthright reporting" and good journalistic writing, either in a student publication or elsewhere.

Joshua Evans III Prize in the Political and Social Sciences.—This memorial prize of \$100, "established by friends because of an outstanding life," is awarded annually to that man in the graduating class of The George Washington University "who has demonstrated his signal ability in the social and political sciences and who has given promise of the interpretation of that ability in good citizenship among his fellows."

Willie E. Fitch Prize.—The Willie E. Fitch Prize of \$75, established in 1883 by James E. Fitch, in memory of his son, is awarded annually to a senior student for the best examination in chemistry.

Allie S. Freed Prize.—This prize of \$40, established in 1957 by Mrs. Allie S. Freed, is awarded annually to a member of the graduating class in the School of Medicine who has demonstrated exceptional proficiency in the field of Preventive Medicine.

Charles Glover Prize.—This prize, established in 1957 by Charles Carroll Glover, Jr., a Trustee of the University, in memory of his great-grandfather, Charles Glover, an illustrious member of the bar of the District of Columbia, consists of selected law books and is awarded annually to the student in the Law School who has attained the highest average grade in the third-year, full-time course.

Alice Douglas Goddard Prize.—This prize of \$75 was established in 1941 by Frederick Joseph Goddard of Georgetown, D. C., in memory of

Alice Douglas Goddard, and is awarded annually to the upper division student making the highest average in American literature.

Edward Carrington Goddard Prize.—This prize of \$75 was established in 1923 by Mary Williamson Goddard, Alice Douglas Goddard, and Frederick Joseph Goddard, of Georgetown, D. C., in memory of Edward Carrington Goddard, class of '81, and is awarded to the junior or senior student making the highest average in the French language and literature.

James Douglas Goddard Prize.—This prize of \$75 was established in 1923 by Mary Williamson Goddard, Alice Douglas Goddard, and Frederick Joseph Goddard, of Georgetown, D. C., in memory of James Douglas Goddard, class of '01, and is awarded to the senior student making the highest average in pharmacy.

Morgan Richardson Goddard Prize.—This prize of \$75 was established in 1923 by Mary Williamson Goddard, Alice Douglas Goddard, and Frederick Joseph Goddard, of Georgetown, D. C., in memory of Morgan Richardson Goddard, and is awarded to the junior or senior student making the highest average in the following fields: economics, business administration, foreign commerce, and public accounting.

Alec Horwitz Prize.—This prize of \$100, established in 1959 by Dr. Alec Horwitz, is awarded annually to a senior in the School of Medicine who has demonstrated exceptional proficiency in the field of surgery.

Gardiner G. Hubbard Memorial Prize in United States History.—This prize of \$60 was established by Mrs. Gertrude M. Hubbard in memory of her husband, the late Gardiner G. Hubbard, and is awarded annually to that member of the graduating class majoring in history who has maintained the highest standing in courses in United States history.

Kappa Beta Pi Prize.—Eta Alumnae Chapter of Kappa Beta Pi Legal Sorority offers an annual prize which consists of a copy of Blackstone's *Commentaries* or a legal dictionary to be awarded to the woman law student in the freshman class who attains the highest average for the freshman year.

Kappa Kappa Gamma Prize.—Kappa Kappa Gamma Sorority offers annually a prize of \$10 to the full-time freshman who achieves the best record in Botany 1-2.

John Bell Lerner Prize.—This prize, established by the bequest of John Bell Lerner, consists of a medal which is awarded annually to that member of the graduating class in the Law School who attains the highest average grade in the entire course for the degree of Bachelor of Laws or Juris Doctor.

Huron W. Lawson Prize.—This prize of \$100, established in 1957 by Mrs. Huron W. Lawson in memory of her husband, Dr. Huron W. Lawson, who was a distinguished member of the Medical Staff of The George Washington University, is to be presented annually to a student

of the graduating class in the School of Medicine who has demonstrated exceptional proficiency in the field of Obstetrics and Gynecology.

Martin Mahler Prize in Materials Testing.—This prize, established in 1953 by Martin Mahler, consists of a one-year membership in the American Society for Testing Materials and is awarded to the upper division or graduate student in engineering who submits the best reports on tests in the Materials Laboratories course with preference given to pre-stressed concrete tests.

Motar Board Prize.—This prize, consisting of a silver cup, is awarded annually to the woman student in the sophomore class having a scholarship average of B or higher and the most outstanding record in activities.

Julius S. Neviasser Prize in Orthopedic Surgery.—This prize of \$100, established in 1956 by Dr. Julius S. Neviasser, is awarded annually to the student in the junior class of the School of Medicine who scores the highest grade in a written examination in Orthopedics.

Omicron Delta Kappa Prize.—Alpha Delta Circle of Omicron Delta Kappa Fraternity offers annually a plaque to be awarded to "that member of the senior class who throughout his course has done the most constructive work in the furtherance and upbuilding of the University student activities".

John Ordronaux Prizes.—These prizes were established in 1909 by the bequest of John Ordronaux.

The amount of \$140 is awarded to the member of the graduating class in the School of Medicine who has the highest scholastic standing.

The amount of \$70 is awarded annually to the student in the Law School who has attained the highest average grade in the first-year, full-time course; and \$70 to the student who has attained the highest average grade in the second-year, full-time course.

Phi Delta Kappa Prize.—This prize, established in 1956 by Beta Gamma Chapter of Phi Delta Kappa, consists of a \$50 United States Government Savings Bond and is presented annually to the outstanding senior man in the teacher education program in the School of Education.

Phi Eta Sigma Prize.—The George Washington University Chapter of Phi Eta Sigma offers annually to the male student attaining the highest scholastic average in his first full semester of work, a choice book selected from the field of the recipient's major interest. The winner's name will be engraved on a plaque in the Office of the Dean of the Junior College.

Pi Beta Phi Prize.—A prize of \$20 is awarded annually by the District of Columbia Alpha Chapter of Pi Beta Phi Fraternity to that woman member of the senior class who throughout her college course has done the most constructive work in the promotion of student activities among the women of the University.

Pi Lambda Theta Prize.—This prize, established in 1956 by Alpha

Theta Chapter of Pi Lambda Theta, consists of a \$50 United States Government Savings Bond and is presented annually to the outstanding senior woman in the teacher education program in the School of Education.

Psi Chi Prizes.—The George Washington University Chapter of Psi Chi, national honorary society in psychology, offers annually two awards in the field of psychology; the first, \$25 to the best undergraduate student in Experimental Psychology; the second, \$25 to the graduate student submitting the best Master's thesis in Psychology.

Ruggles Prize.—The Ruggles Prize of \$35, established by Professor William Ruggles in 1859, is awarded annually to a candidate for a baccalaureate degree for excellence in mathematics.

Sigma Kappa Prize.—Zeta Chapter of Sigma Kappa Sorority offers an annual prize of \$10 to the student with the highest grade in the final examination in General Chemistry.

Sigma Tau Prize.—Xi Chapter of Sigma Tau Fraternity offers annually a medal to be awarded to that member of the freshman class in the School of Engineering who maintains the highest scholastic standing in the work of the entire year.

Society of Colonial Wars in the District of Columbia Prize.—This award, in the form of a gold medal, established in 1953 by the Society of Colonial Wars in the District of Columbia, is to be awarded to a candidate for a graduate degree who, in the judgment of the Faculty of the Department of History, submits a thesis or dissertation demonstrating excellence in historical research in American Colonial history. The University reserves the right to withhold the award if no thesis or dissertation attaining the required degree of excellence is submitted.

Staughton Prize.—The Staughton Prize of \$30, established by the Reverend Romeo Elton, is awarded annually to the student making the best record in the most advanced course in the Latin language and literature.

James MacBride Sterrett, Jr., Prize.—This prize, established in 1911 by Professor James MacBride Sterrett in memory of his son, consists of the *American Institute of Physics Handbook* awarded annually to that student who obtains the highest average in Physics 14, 15, and 16.

Charles Clinton Swisher Historical Club Prize.—This prize of \$100, established in 1936 by the Charles Clinton Swisher Historical Club and augmented in 1941 by the bequest of Professor Charles Clinton Swisher, is awarded annually to the student who submits the best essay covering some phase of medieval history.

Theta Tau Activities Plaque.—Gamma Beta Chapter of Theta Tau Fraternity offers annually a plaque to be awarded to that member of the senior class who has the most outstanding record in activities in the School of Engineering during the entire period of his attendance.

Thomas F. Walsh Prize.—This prize of \$150, established in 1901 by

Thomas F. Walsh, is awarded annually to that student who submits the best essay in Irish history.

Washington Personnel Association Prize.—The Washington Personnel Association awards annually a certificate and \$25 to an outstanding graduating senior in business administration who shows general excellence in studies, demonstrates superiority in one or more courses in personnel administration, and shows qualities of leadership or promise through extra-scholastic activities.

Alexander Wilbourn Weddell Prize.—This prize of \$350, established in 1923, by Mrs. Virginia Chase Weddell, is awarded annually to a candidate for a degree who writes the best essay on the subject of "the promotion of peace among the nations of the world." The prize essays shall become the property of the University and shall not be printed or published without the written consent of the University. The University reserves the right to withhold the award if no essay attaining the required degree of excellence is submitted.

Zeta Tau Alpha Prize.—This prize of \$25, established in 1957 by the Beta Alpha Chapter of the Zeta Tau Alpha Fraternity, is to be awarded to the outstanding senior woman student in sociology.

MILITARY AWARDS

Society of American Military Engineers Gold Medal.—This medal, offered by the Society of American Military Engineers, is awarded annually to selected Air Force ROTC cadets in the next-to-last year of their engineering course and in the last year of such course. Nominations are made jointly by the Professor of Air Science and the Dean of the School of Engineering, and final selection is made nationally by a board of three senior Air Force officers.

National Defense Transportation Association Award.—This medal offered by the National Defense Transportation Association, is awarded to the outstanding senior graduate who qualifies for the Air Force Specialty of Air Transportation Officer or Surface Transportation Officer. The award is given in recognition of leadership qualities, academic standing, aptitude for military service, and for meritorious achievement in furthering the aims and objectives of the Association in the promotion of preparedness for national defense.

Armed Forces Communications and Electronics Association Gold Medal.—These medals, offered by the Armed Forces Communications and Electronics Association, are awarded annually to outstanding senior Air Force ROTC cadets majoring in Electrical Engineering who demonstrate outstanding qualities of military leadership and distinguish themselves either academically or by leadership in campus activities.

Air Force Association Silver ROTC Medal.—This medal, offered by the Air Force Association, is awarded annually to that cadet, who, after

completion of Air Force ROTC summer training, is judged to be the outstanding cadet among those who have indicated their intention to apply for flying training upon graduation.

Reserve Officers' Association Medals.—Gold, silver, and bronze medals, offered by the Reserve Officers' Association of the District of Columbia, are awarded annually to those cadets enrolled in Air Science 101 and 102, 51 and 52, 21 and 22, respectively, who receive the highest grades for the current year in the leadership and academic phases of the Air Force ROTC course.

Chicago Tribune Gold ROTC Medal.—This medal, offered by *The Chicago Tribune*, is awarded each semester to that cadet enrolled in Air Science 151-52 who has made an outstanding contribution to the effectiveness of the Air Force ROTC program by demonstrating the highest ideals of leadership and scholastic excellence.

Chicago Tribune Silver ROTC Medal.—This medal, offered by *The Chicago Tribune*, is awarded each semester to that cadet of the Air Force ROTC Basic Course who has demonstrated outstanding leadership potential and who has maintained excellent scholastic standing in the University.

Sons of the American Revolution ROTC Medal.—This medal, offered by the District of Columbia Society, Sons of the American Revolution, is awarded annually to that freshman cadet of each Air Force ROTC flight who demonstrates to the maximum degree traits and qualities of good citizenship and meets the prescribed requirements established by the donor.

Unit Leadership Trophy.—This silver trophy, offered by Walter G. Bryce, Jr., Colonel, USAF (Retired), first Professor of Air Science at this University, is awarded annually to the Air Force ROTC flight adjudged best in a competitive review and inspection. The Cadet Commander of this flight is presented a set of engraved Second Lieutenant's insignia.

The Colonial Cadet Rifle Trophy.—This trophy, offered by Master Sergeant Jerome Gleason, USAF, first coach of the Air Force ROTC Rifle Team at this University, is awarded to that cadet who is judged to be the outstanding member of the rifle team.

Arnold Air Society Scroll.—This scroll, offered by the Carl Spaatz Squadron of the Arnold Air Society, is awarded annually to the outstanding cadet completing the basic course with a cumulative average of B or better in Air Force ROTC courses.

Pershing Rifles Gold, Silver, and Bronze Achievement Medals.—These medals are awarded annually by the National Headquarters to those Air Force ROTC cadets who are Pershing Riflemen and who are judged to be outstanding examples of the ideals of the Pershing Rifles.

Republic Aviation Award.—An engraved identification bracelet, offered

by the Republic Aviation Corporation, is awarded annually to that cadet enrolled in Air Science 101 and 102 who, in competition, makes the most effective verbal presentation on the Air Power theme.

The Convair Award.—A Convair miniature airplane, offered by the Consolidated Vultee Aircraft Corporation is awarded annually to that cadet enrolled in Air Science 51 and 52 who achieves the highest cumulative grade in the basic course and who applies for flight training.

Reserve Officers' Association Junior Memberships.—Five junior memberships, offered by the Reserve Officers' Association of the District of Columbia, are awarded annually to the five Air Force ROTC cadets who obtain the highest grades in Air Science 101 and 102.

National Rifle Association Club Champion Medal.—This medal, offered by the National Rifle Association, is awarded to a sophomore, junior, or senior member of the Air Force ROTC Rifle team judged to be the outstanding member of the team based on marksmanship, participation in team matches, and contribution to the effectiveness of the team.

National Rifle Association Qualification Medals.—These medals, offered by the National Rifle Association, are awarded annually to members of the Air Force ROTC Rifle team qualifying as Expert, Sharpshooter, or Marksman in indoor rifle firing.

Air Force ROTC Rifle Team Awards.—Trophies, plaques, and medals are awarded annually to Air Force ROTC Rifle Teams through successful competition in the following:

- The Air Force ROTC Liaison Area Championship Matches
- The Army and Area Intercollegiate and Interscholastic Matches
- The Secretary of the Air Force ROTC Rifle Match
- The William Randolph Hearst National ROTC Rifle Matches.

FINANCIAL AID

STUDENT EMPLOYMENT

Graduate and undergraduate student assistantships are available in several departments of the University. Application should be made to the executive officer of the department of instruction concerned.

The Placement Office maintains a registry of positions available in many fields of work and refers qualified applicants for consideration.

LOAN FUNDS

The following loan funds are available to students in the University in accordance with the qualifications placed thereon by the donors. Inquiries should be directed to the Office of the Treasurer.

University Loan Fund.—The Trustees of The George Washington University have made available a fund for short-term loans to students.

Joseph H. Himes Loan Fund.—This fund contributed by Joseph H.

Himes, in the amount of \$17,258.02, is available for loans to students in the School of Medicine.

Home Economics Loan Fund.—This fund of \$382.35, contributed by the D. C. Home Economics Association, is available for loans to senior girls majoring in Home Economics.

Kellogg Medical School Loan Fund.—The W. K. Kellogg Foundation in Battle Creek, Michigan, has established a fund of \$20,460.61 for loans to students in the School of Medicine.

Law Association Loan Fund.—The George Washington Law Association has established a loan fund in the amount of \$1,944.98 for loans to students in the Law School.

School of Medicine Loan Fund.—This fund of \$12,667.62, contributed by medical students, is available for loans to students in the School of Medicine.

National Defense Student Loan Fund.—This fund is available to full time undergraduate and graduate students who are in need of financial assistance. Priority is given those applicants who express a desire to teach in elementary or secondary schools, and whose academic background indicates a superior capacity or preparation in science, mathematics, engineering, or a modern foreign language.

Pfizer Medical School Loan Fund.—Chas. Pfizer & Co., Inc., has established a fund of \$1,046.61 for loans to students in the School of Medicine.

Benjamin Schoenfeld Memorial Pharmacy Loan Fund.—This fund, established by the family and friends of Benjamin Schoenfeld, in the amount of \$2,004, is available for loans to students studying pharmacy.

Henry Strong Educational Foundation.—The Henry Strong Educational Foundation, established at Chicago under the will of General Henry Strong, makes available a fund for loans to both men and women students under the age of twenty-five years.

Sutherland Medical School Loan Fund.—This fund, in the amount of \$1,608.31 and established by Mrs. Rose L. Sutherland, is available for loans to students in the School of Medicine.

REGULATIONS

A student enrolled in the University is required to conform to the University regulations and to comply with the rules and regulations of the college, school, or division in which he is registered.

A student who withdraws or is suspended, or is otherwise absent from the University for one semester or more, may re-enter and continue his work only under the rules and regulations in force at the time of his return.

If a student knowingly makes a false statement or conceals material information on an application for admission, registration card, or any other University document, his registration may be canceled and he will be ineligible (except by special action of the Faculty) for subsequent registration in any unit of the University.

ATTENDANCE

A student is not permitted to attend classes until registration has been completed and fees due have been paid. Regular attendance is required. A student may be dropped from any course for undue absence.

A student who has been suspended, either for delinquency in payment of fees or for any other reason, is not permitted to attend classes during the period of suspension.

For further regulations regarding attendance, consult the announcements of the several colleges and schools.

SCHOLARSHIP REQUIREMENTS

A student who fails to maintain the scholarship requirements of the college, school, or division in which he is registered may be dismissed from the University.

GRADES

Grades are mailed to the student through the Office of the Registrar at the close of each semester. They are not given out by instructors.

Undergraduate.—The following grading system is used: *A*, excellent; *B*, good; *C*, average; *D*, passing; *F*, failing. Whenever a grade has not been assigned, the symbol *Inc.* (incomplete) or the symbol *W* (authorized withdrawal) will be recorded. The symbol *Inc.* indicates that a satisfactory explanation has been given the instructor for the student's failure to complete the required work of the course. An "incomplete" cannot be made up after the lapse of one calendar year except by permission of the Faculty. Courses from which a student has withdrawn

by proper authorization will be indicated by the symbol *W*. A student may not repeat for grade a course in which he has received a grade of *D* or above, unless required to do so by the department concerned.

Graduate.—For graduate work, grades are indicated as "Excellent", "Satisfactory", "Unsatisfactory".

For the grading systems of the School of Medicine and the Law School, see the explanations in the announcements of those schools.

THE QUALITY-POINT INDEX

Undergraduate.—Scholarship is computed in terms of the quality-point index, obtained by dividing the number of quality points by the number of semester hours for which the student has registered, both based on the complete collegiate record.

Quality points are computed from grades as follows: *A*, four points; *B*, three points; *C*, two points; *D*, one point; *F*, no points, for each semester hour for which the student has registered. Courses marked *W* or *Inc.* are not considered in determining the index, except that courses marked *Inc.* will be considered when a formal grade is recorded, or at the close of a calendar year, whichever occurs first. If an "incomplete" is not superseded by a proper grade within the allotted time, it is computed as zero quality points. Grades in courses taken at another institution are not considered in computing the quality-point index.

EXAMINATIONS

Examinations are scheduled in all courses at the end of each semester or at the completion of the course.

For further regulations regarding examinations, consult the announcements of the several colleges, schools, and divisions.

ACADEMIC DISHONESTY

Evidence of dishonesty on the part of any student will result in his suspension from the University upon the recommendation of the appropriate dean's council.

A student found guilty of dishonesty will be deprived of credit for all courses in the semester during which the dishonest act occurs.

A student may apply to be readmitted to the University in the semester or summer session which begins next after an interval of one year from the date of suspension.

WITHDRAWAL

Withdrawal from a course or from the University, without academic or financial penalty, requires the permission of the dean of the college, school, or division in which the student is registered. Permission to

withdraw from the University will not be granted a student who does not have a clear financial record. (See "Fees and Financial Regulations", page 29.)

Withdrawal between October 30 and the end of the fall semester and between February 29 and the end of the spring semester is permitted only in exceptional cases. (See page 144 for regulations governing withdrawal from the School of Engineering.)

All charges for courses dropped without the approval of the dean must be met by the student. Reporting the dropping of a course to an instructor does not effect its discontinuance.

A student may not withdraw from either the basic course or the advanced course of the Air Force ROTC without the approval of the President of the University.

CHANGES IN PROGRAM OF STUDIES

Changes within a College, School or Division.—A student may not change or drop courses (see "withdrawals", above) or change his status to that of auditor except with the approval of the dean of the college, school, or division in which he is registered.

Change from one section to another of the same course may be made with the approval of the dean and the department concerned.

Change from one major subject to another within the same college or school may be made with the approval of the dean. All requirements specified in the course of study to which the change is made must be satisfied.

Transfer within the University.—Transfer from one college, school, or division to another may be made only with the approval of the deans concerned. Except in cases of normal progression from the Junior College to Columbian College or the School of Government in a regular four-year program, application for transfer must be made to the Director of Admissions on the proper form provided by his office.

Students wishing to transfer from the Division of University Students or the Division of Special Students to a degree-granting college or school of the University should note that a maximum of 45 semester hours will be accepted in transfer.

In order to provide degree candidates with proper academic counsel and the benefits of integrated programs of study, the faculties of the various schools and colleges have established minimum residence requirements and regulations with regard to supervision of the work done in the student's major field. In addition, various special regulations regarding course sequence, selection of electives, and advisory approval of programs apply in particular curricula. Students transferring within the University are advised to study carefully the graduation requirements

on pages 54-57 and to note that in all undergraduate divisions, except the Junior College and the College of General Studies, 30 semester hours, including *at least 12 semester hours* in the major field, must be completed *in residence* in the school or college from which the degree is sought. Upon transfer the student should consult the dean concerned and understand clearly the requirements he must fulfill. (For residence requirements in the Junior College, see page 68. For information concerning the College of General Studies, see separate bulletin.)

CREDIT

Credit toward a degree is given only after regular registration for and satisfactory completion of the required work of classes in the University, or upon the granting of advanced standing in accordance with the regulations of the several colleges, schools, and divisions.

On request the Registrar will issue to the student a balance sheet showing the amount of work completed and the requirements, both quantitative and qualitative, remaining to be met for the degree.

In special instances, a person who has been admitted to the University may be registered, with the permission of the instructor, as an "auditor" in a class (no academic credit). An auditor is not required to take active part in the exercises or to take examinations.

TRANSCRIPTS OF RECORD

Official transcripts of student records will be forwarded on request to other institutions. Unofficial copies of records will be issued to the student on request. No charge is made for the first transcript; a fee of one dollar is charged for each one thereafter. No certificate of work done will be issued for a student who does not have a clear financial record.

SUMMER SCHOOL CREDIT

A student who plans to attend summer school sessions at another institution with the intention of having credits so obtained apply toward graduation from this University must first secure the written approval of the dean of his college or school. In no event will such credits be recognized to an amount in excess of that which might be earned in a similar period in this institution.

PHYSICAL EDUCATION REQUIREMENTS

Students in the Junior College and freshmen and sophomores in the School of Engineering are required to take Physical Education 1-2 and 11-12 unless they are registered for less than 9 semester hours or unless regular employment during the day makes it necessary to take all classes

during the evening hours. Air Force ROTC cadets and a limited number of freshman and sophomore women may substitute Air Science 1-2 and 11-12 for the physical education requirement.

Any other exemptions will be granted only upon written petition which has been recommended by the physical education department concerned and approved by the dean of the college or school in which the student is registered.

Junior College students exempt from the physical education requirement will be required to substitute four hours of elective.

A student entering the University with advanced standing is not exempt from the physical education requirements unless he has satisfactorily met the requirements elsewhere.

The required medical and physical examinations, as specified by the departments of physical education, will be arranged at the time of registration.

GRADUATION REQUIREMENTS

To be recommended by the Faculty for graduation a student must have met the admission requirements of the college or school in which he is registered, completed satisfactorily the scholarship, curriculum, residence, and other requirements for the degree for which he is registered, and be free from all indebtedness to the University.

Application for Graduation.—Application for a degree must be filed in the Office of the Registrar at the time of registration for the last semester of the senior or final year.

Scholarship.—In all undergraduate divisions of the University the scholarship requirement for graduation is a quality-point index of at least 2.00.

The graduate student must meet the scholarship requirements for the particular degree for which he is registered.

Curriculum.—Minimum curriculum requirements for each degree are stated under the college or school offering work in preparation for the degree. (For Air Force ROTC graduation requirements see the Department of Air Science.)

Residence.—Unless otherwise specified, in all undergraduate divisions of the University, a minimum of thirty semester hours, including at least twelve hours in the major field, must be completed in residence in the school or college from which the degree is sought. This requirement applies to students transferring within the University as well as to students transferring from other institutions. Summer work may be counted in residence, but in no case may the period of residence aggregate less than thirty weeks. Unless special permission is granted by the dean of the college or school concerned to pursue work elsewhere, the work of the senior or final year must be completed in residence.

The graduate student must meet the residence requirements for the particular degree for which he is registered.

With the permission of the dean of the college or school concerned, a student may be granted leave of absence; such student should, however, remain technically in residence by paying the residence fee for each semester he is absent. For the purpose of this regulation, the summer session will be disregarded.

The student who has completed his tuition requirements but whose graduation is deferred because of failure to submit an acceptable thesis, failure to pass the comprehensive examination, or for any other reason, must maintain "in residence" status by paying the residence fee for the semester or summer session immediately preceding the graduation at which he expects to receive his degree.

Graduate Record Examination.—All candidates for Bachelor's degrees in Columbian College, the School of Engineering, the School of Government, and the College of General Studies are required to take two parts of the Graduate Record Examination in the University's institutional testing program. The examinations are conducted by the University twice a year: the Fall Testing Session (December 12, 1959) for seniors graduating in February, and the Spring Session (April 9, 1960) for those graduating in June or October. Dates of the examinations are announced in the *Schedule of Classes*.

Each senior required to take the Graduate Record Examination must register for it in the office of his dean when he registers for his final regular semester of study (excluding summer sessions). A \$7 examination fee is payable at the time of registration.

Students will receive individual reports of test scores and may avail themselves of the regular transcript services of the Educational Testing Service. By special permission seniors who expect to graduate in June may take the Graduate Record Examination at the previous Fall Testing Session, so as to have transcripts available early in the year when applying for admission to graduate schools.

See the announcements of the various schools and colleges in this CATALOGUE for a description of the tests required.

Attendance and Conduct.—The University reserves the right to refuse to confer a degree upon a candidate whose attendance or conduct has been unsatisfactory.

Thesis, Master's Problem, or Dissertation.—A thesis, Master's problem, or dissertation submitted in partial satisfaction of requirements for the Master's degrees, the degree of Doctor of Education, the degree of Doctor of Juridical Science, the degree of Doctor of Business Administration, or the degree of Doctor of Philosophy must be presented in its final form to the dean of the college or school concerned not later than the date specified in the University calendar. Three complete copies of

each are required. It is the responsibility of the candidate for a graduate degree to obtain from his dean a printed copy of the regulations governing the styling and reproduction of theses, Master's problems, and dissertations, which are rigidly enforced.

Accepted theses, Master's problems, or dissertations, with accompanying drawings, become the property of the University and are deposited in the University Library, where the duplicate copies are bound and made available for circulation. Permission to publish or adapt material in them must be secured from the appropriate dean.

Presence at Graduation.—A candidate is required to be present at the graduation exercises unless written application for graduation *in absentia* is approved by the dean of his college or school.

HONORS

With distinction.—In all undergraduate divisions of the University the degree may be conferred "with distinction", at the discretion of the Faculty, if a student attains a quality-point index of 3.50 or higher on all work taken at this institution except that taken during the semester immediately preceding the granting of the degree. To be eligible for this honor a student must have completed at this institution at least one-half of the work required for the degree.

In the School of Medicine and the Law School, degrees may be conferred "with distinction", at the discretion of the Faculty, on those students who attain an average of *A* on all work taken for the degrees.

Special honors.—Special honors may be awarded by the Faculty to any member of the graduating class for outstanding achievement in the student's major field of work on recommendation of the major department under the following regulations:

1. The student must have his candidacy for special honors approved by the faculty member representing the major department or field not later than the beginning of the senior year.
2. The student must meet such other conditions as may be set at the time his candidacy is approved.
3. No student will be awarded special honors unless he has a quality-point index of at least 3.00 on all work taken at this institution except that taken during the semester immediately preceding the granting of the degree.
4. To be eligible for honors a student must have completed at this institution at least one-half of the work required for the degree prior to the beginning of the semester immediately preceding the granting of the degree.

Military honors.—An Air Force ROTC cadet may be designated a "Distinguished Air Force ROTC Cadet" if he (1) has completed prior to Science 101 and 102 with an academic standing among the upper third

of the students enrolled therein; (2) has an accumulative academic average of *B* or better; (3) possesses high moral character and definite aptitude for service in the Air Force; (4) has distinguished himself by demonstrated leadership through participation in recognized extracurricular activities and while in attendance at an Air Force ROTC Summer Training Unit. A "Distinguished Air Force ROTC Cadet" is authorized to wear a "Distinguished Cadet" badge above the right breast pocket of the uniform. He may submit an application for a regular commission in the United States Air Force, which is given final consideration upon his designation as a "Distinguished Air Force ROTC Graduate."

An Air Force ROTC cadet may be designated a "Distinguished Air Force ROTC Graduate" if he has (1) been designated a "Distinguished Air Force ROTC Cadet" and maintained the standards required of a "Distinguished Air Force ROTC Cadet" during the period between designation and graduation; (2) completed the Air Force ROTC Advanced Course; and (3) completed the requirements for a Bachelor's degree. A "Distinguished Air Force ROTC Graduate" will be presented with a certificate signed by the Commandant, Air Force ROTC, and, if he made application, will be considered for a regular commission in the United States Air Force.

THE LIBRARY

A student registered in the University is entitled to the reference use of the University Library. The Student Identification Card, issued upon the payment of fees, must be presented as identification.

The loan period for most books available for home circulation is two weeks, with an additional two-week renewal. A fine of five cents will be charged for each day a book is overdue. Any book which does circulate is subject to recall by the Librarian at any time. Reserve books for collateral reading must be used in the reading rooms when the Library is open. With special permission they may be drawn for overnight use when the Library closes. A fine of twenty-five cents will be charged for the first hour or fraction of an hour and five cents for each hour or fraction thereafter that a reserve book is overdue. Grades of a student will be withheld until his library record is clear.

RIGHT TO DISMISS STUDENTS

The right is reserved by the University to dismiss or exclude any student from the University, or from any class or classes, whenever, in the interest of the student or the University, the University Administration deems it advisable to do so.

RIGHT TO CHANGE RULES

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.

PROPERTY RESPONSIBILITY

The University is not responsible for the loss of personal property in any University building. A "Lost and Found" Office is maintained in the Student Union.

THE COLLEGES, SCHOOLS, AND DIVISIONS

THE JUNIOR COLLEGE

THE FACULTY AND STAFF OF INSTRUCTION •

George Martin Koehl, A.M., *Dean of the Junior College*
William Lewis Turner, Ph.D., *Assistant Dean of the Junior College*

Elmer Louis Kayser, Ph.D., LL.D., *Professor of European History*
Warren Reed West, Ph.D., *Professor of Political Science*
Ruth Harriet Atwell, A.M., *Professor of Physical Education for Women*
Francis Edgar Johnston, Ph.D., *Professor of Mathematics*
Benjamin Douglass Van Evera, Ph.D., Sc.D., *Professor of Chemistry*
Merle Irving Protzman, Ph.D., *Professor of Romance Languages*
Ralph Dale Kennedy, Ph.D., *Professor of Accounting*
Florence Marie Mears, Ph.D., *Professor of Mathematics*
Wood Gray, Ph.D., *Professor of American History*
Thelma Hunt, Ph.D., M.D., *Professor of Psychology*
Ira Bowers Hansen, Ph.D., *Professor of Zoology*
Paul William Bowman, Ph.D., *Professor of Biology*
Arthur Edward Burns, Ph.D., *Professor of Economics*
John Withrow, Brewer, Ph.D., *Professor of International Law*
Frances Kirkpatrick, A.M., *Professor of Home Economics*
William Henry Myers, A.M., *Professor of Physical Education for Men*
Harold Loran Geisert, Ph.D., *Professor of Sociology and Anthropology*
Samuel Nathaniel Wrenn, Ph.D., *Professor of Chemistry*
Charles Rudolph Naeser, Ph.D., *Professor of Chemistry*
Howard Maxwell Merriman, Ph.D., *Professor of American Diplomatic History*
Ernest Sewall Shepard, A.M., *Professor of English Literature*
Fred Salisbury Tupper, Ph.D., *Professor of English Literature*
Charles Watson Bliven, M.S., *Professor of Pharmacy*
Calvin Darlington Linton, Ph.D., *Professor of English Literature*
Charles Edward Gauss, Mus.B., Ph.D., *Elton Professor of Philosophy*
Donald Chenoweth Kline, B.Arch., M.F.A., *Professor of Art*
Helen Bennett Lawrence, A.M., *Professor of Physical Education for Women*
Charles William Cole, Ph.D., *Professor of American Literature*
George Martin Koehl, A.M., *Professor of Physics*

* The President of the University, the Dean of Faculties, the Dean and Assistant Deans of the College, the Registrar of the University, the Director of Admissions of the University, the Professors, Associate Professors, Assistant Professors, and Instructors constitute the Faculty

- Lubin Poe Leggette, A.M., Ed.D., *Depew Professor of Speech*
 Robert Dale Campbell, Ph.D., *Professor of Geography*
 John Francis Latimer, Ph.D., *Professor of Classical Languages and Literatures*
 *Joseph Henry Krupa, M.S., Ed.D., *Professor of Physical Education for Men*
 †Roderic Hollett Davison, Ph.D., *Professor of European History*
 Calvin Weir Pettit, Ph.D., *Professor of Speech*
 Kathryn Mildred Towne, A.M., *Professor of Home Economics*
 ‡Elizabeth Burtner, A.M., *Professor of Physical Education for Women*
 Robert Corbin Vincent, Ph.D., *Professor of Chemistry*
 Edith Elizabeth Mortensen, Ph.D., *Professor of Zoology*
 William Frederick Sager, Ph.D., *Professor of Chemistry*
 Lewis Slack, Ph.D., *Professor of Physics*
 George Elbert McSpadden, Ph.D., *Professor of Romance Languages*
 Ross Pelton Schlabach, Jr., M.S., *Professor of Journalism*
 Russell Bradford Stevens, Ph.D., *Professor of Botany*
 Robert Hamilton Moore, Ph.D., *Professor of English Composition*
 Reuben Esselstyn Wood, Ph.D., *Professor of Chemistry*
 James Harold Coberly, Ph.D., *Professor of American Literature*
 Harold Frederick Bright, Ph.D., *Professor of Statistics*
 Wolfram Karl Legner, Ph.D., *Professor of German*
 Nels David Nelson, Ph.D., *Professor of Mathematics*
 Don Carlos Faith, Ph.D., *Professor of Educational Psychology*
 Geza Teleki, Ph.D., *Professor of Geology*
 Isidor Heller, Sc.D., *Professor of Mathematics*
 ‡Gretchen Louisa Rogers, Ph.D., *Associate Professor of German*
 William Lewis Turner, Ph.D., *Associate Professor of English*
 §Curtis Edward Tuthill, Ph.D., *Associate Professor of Psychology*
 George Francis Henigan, Jr., Ph.M., *Associate Professor of Speech*
 Edwin Lockwood Stevens, A.M., *Associate Professor of Speech*
 Murial Hope McClanahan, Ph.D., *Associate Professor of English Composition*
 Sam Clark Munson, Ph.D., *Associate Professor of Biology*
 Carr Bartleson Lavell, A.M., *Associate Professor of Sociology*
 Raymond George Hanken, B.S. in P.E., A.M. in Ed., *Associate Professor of Physical Education for Men*
 Willard Edmund Caldwell, Ph.D., *Associate Professor of Psychology*
 Rafael Supervía, Doctor en derecho, *Associate Professor of Spanish*
 James Willard Harkness, B.S., Ed.M., *Associate Professor of Chemistry*
 Mildred Hollander Shott, A.M., *Associate Professor of Secretarial Studies*

* On sabbatical leave fall semester 1959-60.

† On leave of absence spring semester 1959-60.

‡ On sabbatical leave spring semester 1959-60.

§ On sabbatical leave 1959-60.

Clifton Earl Olmstead, A.B., Th.D., *Associate Professor of Religion*
 Ronald Bettes Thompson, Ph.D., *Associate Professor of European History*

Philip Henry Highfill, Jr., Ph.D., *Associate Professor of English Literature*

Vincent James DeAngelis, B.S. in P.E., A.M. in Ed., *Associate Professor of Physical Education for Men*

John Gage Allee, Jr., Ph.D., *Associate Professor of English Philology*

Theodore Peter Perros, Ph.D., *Associate Professor of Chemistry*

Richard Catlin Haskett, Ph.D., *Associate Professor of American History*

*Wilson Emerson Schmidt, Ph.D., *Associate Professor of Economics*

William Edward Schmidt, Ph.D., *Associate Professor of Chemistry*

*David Gover White, B.Chem.Eng., Ph.D., *Associate Professor of Chemistry*

John Palmer Reesing, Jr., Ph.D., *Associate Professor of English Literature*

James Willis Robb, Ph.D., *Associate Professor of Romance Languages*

William Graham Clubb, Ph.D., *Associate Professor of French*

Thomas Phillip George Liverman, Ph.D., *Associate Professor of Mathematics*

Guido Ettore Mazzeo, A.M., *Associate Professor of Romance Languages*

Claude Yves Meade, Ph.D., *Associate Professor of Romance Languages*

Robert Crumpton Willson, A.B., *Associate Professor of Journalism*

Lee Sheward Bielski, A.M., *Associate Professor of Speech*

Helen Bates Yakobson, B.S., *Associate Professor of Russian*

Harland Walter Westermann, A.M., *Associate Professor of Geography*

Alton Harold Desmond, Ph.D., *Associate Professor of Zoology*

Richard Ernest Murphy, Ph.D., *Associate Professor of Geography*

Richard Walton Stephens, Ph.D., *Associate Professor of Sociology and Anthropology*

Laurence Pereira Leite, A.M., *Associate Professor of Art*

Robert Harris Walker, Jr., Ph.D., *Associate Professor of American Literature*

Herman Hedberg Hobbs, Ph.D., *Associate Professor of Physics*

Howard Rowland Ludden, A.M., *Assistant Professor of Political Science*

Eva Mayne Johnson, Ph.D., *Assistant Professor of Psychology*

James Cecil King, Ph.D., *Assistant Professor of German*

Carol Ruth St. Cyr, Ph.D., *Assistant Professor of Education*

Wilbur Earle Benson, M.B.A., *Assistant Professor of Accounting*

Richard Harold Schlagel, Ph.D., *Assistant Professor of Philosophy*

Joseph Louis Metivier, Jr., A.M., *Assistant Professor of Romance Languages*

Robert Elemer Gajdusek, A.M., *Assistant Professor of English*

John Lyle Prather, Ph.D., *Assistant Professor of Physics*

* On sabbatical leave spring semester 1959-60.

- Loretta May Stallings, A.M., *Assistant Professor of Physical Education for Women*
 Camille Jacob Craig, B.S. in P.E., A.M. in Ed., *Assistant Professor of Physical Education for Women*
 Clarence William Schimelpfenig, Ph.D., *Assistant Professor of Chemistry*
 William Arthur Smith, A.M., *Assistant Professor of Mathematics*
 Elizabeth Truman Wright, A.M., *Assistant Professor of English Composition*
 Nancy Marie Tischler, Ph.D., *Assistant Professor of English*
 Gay Ellen Cheney, B.S. in Ed., *Assistant Professor of Physical Education for Women*
 Gennaro Anthony Santangelo, A.M., *Assistant Professor of English*
 Paul Harold Stacy, A.M., *Assistant Professor of English*
 Paul Curry Steele, A.B., M.F.A., *Assistant Professor of English Composition*
 James Gerard Sweeney, A.M., *Assistant Professor of English*
 Natasha Coffin Hollbach, Ph.D., *Assistant Professor of Chemistry*
 Daniel Barry Levine, A.B., *Instructor in Physics*
 Margaret Wheeler Montzka, A.M., *Instructor in Physics*

COMMITTEES*

THE DEAN'S COUNCIL †

1960

Philip Henry Highfill, Jr.
 James Cecil King

1961

Ronald Bettes Thompson
 James Willis Robb

1962

Theodore Peter Perros
 Richard Walton Stephens

COMMITTEE ON ADMISSION AND ADVANCED STANDING

James Willard Harkness, *Chairman*
 Francis Edgar Johnston
 William Graham Clubb
 Muriel Hope McClanahan
 John Lyle Prather

COMMITTEE ON SCHOLARSHIP

William Lewis Turner, *Chairman*
 Robert Corbin Vincent
 Muriel Hope McClanahan
 Wilbur Earle Benson
 Edith Elizabeth Mortensen
 Raymond George Hanken
 Joseph Louis Metivier, Jr.

* The Dean of the Junior College is a member ex officio of all committees.
 † Elected by the Faculty.

JUNIOR COLLEGE ADVISORY COMMITTEE

Dean of the Junior College, *Chairman*

Ruth Harriet Atwell
Charles Watson Bliven
Robert Corbin Vincent
Carr Bartleson Lavell
James Cecil King

Frances Kirkpatrick
Joseph Henry Krupa
William Lewis Turner
Mildred Hollander Shott
Carol Ruth St. Cyr

Wilbur Earle Benson

GENERAL INFORMATION

INTRODUCTORY

The Junior College, which administers the first two years of the standard four-year college program in the liberal arts and sciences, was established in 1930, as a part of the academic reorganization of the University. Prior to 1930, the four-year program had been administered by Columbian College since its organization in 1821.

The Junior College curricula continue the studies of a general cultural nature begun in the secondary schools, and lay a foundation for the more specialized work which is to follow. Emphasis is accordingly laid (1) upon the social, cultural, biological, and physical background of civilization and (2) upon the discipline necessary to the effective prosecution of more advanced work.

The curricula offered in preparation for admission to Columbian College prepare students for advanced work in the fields of arts and letters and in science. They also serve as the first two years of the prelegal and premedical programs. The curriculum in Science meets the requirements for the first two years of the Bachelor of Science in Medical Technology curriculum offered by Columbian College in collaboration with the Department of Pathology and the University Hospital.

The Junior College also provides the preprofessional work required for admission to the schools of Pharmacy, Education, and Government.

In addition it provides the following two-year curricula in vocational training: Accounting, Home Economics, Physical Sciences, and Secretarial Studies.

ADVISORY SYSTEM

In order that students may have opportunities for assistance in planning their courses and also for obtaining personal, educational, and vocational advice in every phase of their academic work during the first two years, a number of members of the Faculty serve as advisers to Junior College students.

Members of the Faculty, selected for their knowledge of Junior College requirements and student programs, advise students in making up their programs of study for each semester. A separate staff of experi-

enced advisers under the chairmanship of the Dean assists those students who find it difficult to make adjustments to college life because of scholastic or other reasons. Students who are "warned" or who are on probation may be required to consult these advisers at regular intervals. Students are encouraged to consult any member of the Advisory Staff or their instructors about college problems at any time.

Copies of notices of "warning" or probation will be sent to the parents or guardians of students on request, and the Dean and members of the Advisory Staff are available for consultation with parents or guardians concerning student problems.

REGULATIONS

Students in the Junior College are subject to, and are expected to familiarize themselves with, the regulations regarding ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 13-29, and the University regulations stated on pages 50-58.

SCHOLASTIC-APTITUDE TESTS

Students admitted to the Junior College may be required to take the scholastic-aptitude tests of the University.

REQUIRED PLACEMENT EXAMINATIONS

English.—Special placement examinations, required of all entering freshmen, will be conducted by the English Department. Before students are registered in English 1, they are tested in the minimum essentials of vocabulary, spelling, grammar, standard usage, and writing skill. Those students who show marked superiority may, upon passing further tests, be exempted from one or both halves of the English Composition course; those who are inadequately prepared for English 1 will be assigned to English A.

Foreign Languages.—A standardized placement examination will be required of all entering students who wish to continue in college the language begun in high school (French, German, Russian, or Spanish). Upon completion of the examination assignment will be made to the appropriate course with credit to be assigned on the usual basis. This does not apply to students whose previous experience in a given language is equivalent to two college years.

The Use of Correct English.—The use of correct English, oral or written, is required not only in English but also in all other courses (see page 87).

FIRST- AND SECOND-GROUP COURSES

A Junior College student may not take second-group courses (courses numbered 101-200) without the written permission of the instructor and

of the Dean of the Junior College. A student will not be permitted to postpone a first-group course required under the curriculum for which he is registered in order to take a second-group course for elective credit. The principle that first-group courses must be taken in the Junior College years, and advanced courses in Columbian College and the professional schools, will be rigidly adhered to in approving student programs. No student on probation is permitted to take second-group courses except by the express permission of the Committee on Scholarship.

AMOUNT OF WORK

Sixteen or 17 semester hours constitute a normal academic load. A student not on probation may be permitted by the Dean to take 18 semester hours.

A student whose quality-point index is 3.50 may, with the permission of the Dean, take 19 or 20 semester hours. No student may take more than 20 hours, except with the permission of the Committee on Scholarship.

For an employed student working 20 or more hours a week, 10 semester hours constitute a normal academic load. An employed student not on probation may be permitted by the Dean to take 11 hours. An employed student whose quality-point index is 3.50 may be permitted by the Dean to take 13 or 14 hours.

A student previously unemployed who accepts employment subsequent to registration or at any time during a semester is required to report that fact immediately to the Dean and to bring his program within the limitations set by the Faculty upon the amount of work to be carried by an employed student.

ATTENDANCE

The student is held responsible to the instructor in charge of the course for which he is registered for all the work of the course, and all absences must be excused before provision will be made for him to make up the work missed.

With the exceptions noted below, occasional absences from a course not to exceed in number the semester hours of credit for the course, will be automatically excused. (If a course has distinct divisions such as lectures, laboratories, recitations, etc., these excuses apply pro rata to such separate divisions.) In the application of this rule absences immediately preceding or following holiday periods are to be counted double.

A student on probation is allowed no automatic excuses.

Excuses for absences from two or more consecutive class periods, and for absences from examinations which have been announced in advance, can be obtained only by making written application to the instructor in charge of the course.

A student whose absences from any class, whether excused or unexcused, are in excess of one-fourth of the total number of class periods will receive the grade of *F* for the course, except by special ruling of the Dean on recommendation of the instructor in the course.

CLASSIFICATION OF STUDENTS

A student who has satisfactorily completed at least 32 semester hours of work including 18 hours in his curriculum requirements, is classed as a *sophomore*.

THE DEGREES

Upon the satisfactory completion of the requirements of the Junior College, the degree of Associate in Arts or Associate in Science is conferred.

REQUIREMENTS FOR THE DEGREES

RESIDENCE

The last 15 hours of work required for the Associate's degrees must be taken in residence in the Junior College.

SCHOLARSHIP

The system of grading and of computing scholarship is described in detail on pages 50 and 51.

In order to receive the degree of Associate in Arts or Associate in Science a student must have a quality-point index of at least 2.00.

Honor Roll.—The name of every student who has a quality-point index of 3.50 or higher on the basis of his complete record at this University will be placed on the honor roll and published. No consideration is given to those who have completed a total of less than 15 semester hours. A place on the honor roll does not necessarily mean that the student will receive honors upon graduation.

Dean's List.—The name of every student who makes a quality-point index of 3.50 or higher on a minimum of 15 semester hours of work taken in any one semester will be placed on the Dean's List for that semester.

Probation.—A student must maintain a quality-point index of at least 2.00 to be in good academic standing.

A student who has attempted 12 or more semester hours of work and whose quality-point index is between 1.50 and 2.00 will be placed on probation. This probation extends over the period in which the student attempts 12 semester hours of work.

The student who has earned an average of 2.00 or below for work undertaken during this probationary period will be suspended. The student whose overall quality-point index is still below 2.00, but whose

average for work undertaken during the probationary period is above 2.00 may be continued on probation by the Committee on Scholarship.

Suspension.—A student whose quality-point index is below 1.50 is subject to suspension by the Committee on Scholarship.

A student suspended for poor scholarship may apply for readmission after an interval of one calendar year. On application for readmission the student must submit specific evidence to the Committee on Scholarship that he is better qualified to pursue college work.

A student suspended twice for poor scholarship will not be readmitted.

Mid-semester Warning.—At the end of the seventh week of each semester, instructors file in the Office of the Junior College the names of those students who are doing work of *D* grade or lower. A notice of Warning is sent to the student and a copy filed with the appropriate adviser. A "warning" constitutes notice to the student that he must consult his instructor and adviser at the earliest opportunity.

CURRICULUM REQUIREMENTS

The satisfactory completion of 64 semester hours of college work is required, as outlined in one of the Junior College curricula described below.

Except for students intending to apply for the combined degrees of Bachelor of Arts and Doctor of Medicine or the degree of Bachelor of Science in Medical Technology, not more than 12 hours of professional courses may be included in the 124 hours required for the Bachelor's degrees in Columbian College. Junior College students electing professional courses under this rule must obtain the approval of the Dean of the Junior College before registering for these courses.

Physical Education Requirements.—Physical Education or Air Force ROTC Leadership Laboratory is required of all students in the freshman and sophomore years. (See "Physical Education Requirements", pages 53 and 54.)

Foreign Language Requirements.—In curricula requiring foreign languages a student must complete satisfactorily the equivalent of two years of college work in a single foreign language.

A student offering for admission four acceptable high school units of a single foreign language, or the equivalent, is not required to take any foreign language.

A student who offers less than four units and wishes to meet the Junior College requirement by continuing in the same language must take the language placement test (see page 66).

In general, one year of high school language is considered to be equivalent to one semester of college language.

In some instances foreign languages are required or recommended as preparation for advanced work in Columbian College and the profession-

al schools. The student should consult his adviser as to these requirements, so that appropriate foreign languages may be included, when necessary, in his Junior College program.

English Requirements.—Entering students registered in the pre-Columbian College curricula must follow the sequence of English 1, both halves of one of the introductory literature courses, and English 4. This does not apply to students transferring to these curricula or students registering in the preprofessional or vocational curricula.

JUNIOR COLLEGE CURRICULA

I. CURRICULA FOR ADMISSION TO COLUMBIAN COLLEGE AND THE PROFESSIONAL SCHOOLS

Each of the following curricula comprises the first two years of a standard four-year college course and prepares the student for upper division work.

All curricula in this group lead to the degree of Associate in Arts.

A. COLUMBIAN COLLEGE:

1. ARTS AND LETTERS

The following two-year curriculum prepares for the Bachelor of Arts program in Columbian College:

Arts program in Columbian College:		Semester Hours
English Composition and Literature	English 1; 51-52, 71-72, 91-92, Classical Languages 71-72, French 51-52, German 51-52, or Spanish 51-52; English 4.	12
Foreign Language	See pages 69-70 for foreign language requirement	12
Physical Education	See pages 53-54 for statement of requirement.	4
Science	Biology 1-2; Botany 1-2; Chemistry 3-4; 11-12; Geology 1-2; Physics 11, 12; or Zoology 1-2	6-8
Social Studies	Economics 1-2; Geography 51, 52; History 39-40, 71-72; Political Science 9-10 (1 and 9, 1 and 10), or Sociology and Anthropology 1-2	6
Elective*		22 or 21
Total		64

2. SCIENCE

The following two-year curriculum prepares for the Bachelor of Science program in Columbian College:

* It is suggested that electives include one of the following courses: Art 31-32, 71-72; Philosophy 41-52, 111-12; Religion 9-10, 59-60.
The student should obtain the advice of his major department as to proper prerequisite and collateral courses for the intended major.
Credit is not given for courses elected in Secretarial Studies; credit may be given for a limited number of courses elected in Physical Education, with the approval of the Dean.

Science and the Bachelor of Science in Medical Technology curricula in Columbian College:

	Semester Hours
English Composition and Literature English 1; 51-52, 71-72, 91-92, Classical Languages 71-72, French 51-52, German 51-52, or Spanish 51-52; English 4.....	12
Foreign Language ... French, German, or Russian or nonscience elective	12
NOTE.—A reading knowledge of French, German, or Russian is required. This may be satisfied by French 4, German 4, or Russian 4 or by special examination.	
Mathematics Mathematics 3, 6, or electives.....	6
NOTE.—The Mathematics 3 requirement may be satisfied by offering two years of high school algebra acceptable for admission; the Mathematics 6 requirement may be satisfied by offering one-half year of high school trigonometry acceptable for admission.	
Physical Education .. See pages 53-54 for statement of requirement...	4
Science (a) Biology 1-2, Botany 1-2, Zoology 1-2 ^a (b) Chemistry 11-12, Geology 1-2, Physics 11 and 12 or 11 and 14	18 to 22
(In satisfying this requirement, at least one year-course must be taken in each group (a) and (b).)	
Social Studies Economics 1-2; Geography 51, 52; History 39-40, 71-72; Political Science 9-10; or Sociology and Anthropology 1-2	6
Electives	2 to 6
Total.....	64

3. PREMEDICAL

The first 60 semester hours of the 90 required for admission to the School of Medicine are undertaken in the Junior College. Premedical students may follow either the Arts and Letters curriculum or the Science curriculum listed above. However, they should note the specific requirements for admission to the School of Medicine. (See Admission, pages 17-18.) Each premedical program must be approved by the Premedical Adviser.

^a Students enrolled in the Medical Technology program may add Bacteriology 112 to this group.

[†] It is suggested that electives include one of the following courses: Art 51-52, 71-72; Philosophy 51-52, 111-12; Religion 9-10, 50-51.

The student should obtain the advice of his major department as to proper prerequisite and collateral courses for the intended major.

Credit is not given for courses elected in Secretarial Studies; credit may be given for a limited number of courses elected in Physical Education, with the approval of the Dean.

4. MEDICAL TECHNOLOGY

Candidates for the degree of Bachelor of Science in Medical Technology, offered by Columbian College in collaboration with the Department of Pathology and the University Hospital, should follow the Science curriculum in the Junior College, including specifically Chemistry 11-12, Zoology 1-2, and Bacteriology 112. See pages 90-91 and 120-21 for a description of the course and a statement of further requirements.

B. SCHOOL OF PHARMACY:

The following two-year curriculum prepares for the Bachelor of Science in Pharmacy curriculum in the School of Pharmacy.

Students planning to complete the requirements for the degree of Bachelor of Science in Pharmacy (see pages 159-62) in four years must complete 9 hours of approved elective work in addition to the Junior College curriculum listed below. Some of this work may be completed during the fall and spring semesters; the remainder may be completed during a summer session.

be completed during a summer session.		Semester Hours
		6
English	English 1, 2	
Science	Botany 1 or 2, Chemistry 11-12, Physics 11, 12, Zoology 1 (Freshman year).....	21
	Chemistry 151-52 (Sophomore year).....	8
Social Studies	Economics 1	3
Professional Courses	Pharmacy 1-2 (Freshman year).....	3
	Pharmacy 21-22, 23, 25 (Sophomore year).....	14
Physical Education	See pages 53-54 for statement of requirement...	5
Elective*		
Total.....		64

C. SCHOOL OF EDUCATION:

1. EDUCATION

The following two-year curriculum prepares for the Bachelor of Arts in Education curriculum in the School of Education:

Arts in Education curriculum in the School of Education:		Semester Hours
English	English 1, 2	6
	English 51-52, 71-72, or 91-92.....	6
Foreign Language ...	(French, German, Latin, Russian, or Spanish.) See pages 69-70 for foreign language require- ment	12
Physical Education ..	See pages 53-54 for statement of requirement...	4

* Credit is not given for courses elected in Physical Education or Secretarial Studies.

Science and Mathematics	Two semesters to supplement senior high school courses, selected from: Biology 1-2; Botany 1-2; Chemistry 3-4; 11-12; Physics 11, 12; Zoology 1-2; or Mathematics 2 and 3, or 3 and 6, or 6 and 12	6 or 8
Social Studies	History 71-72 Economics 1-2; Geography 51, 52; History 39-40; Political Science 1 and 9, 1 and 10, or 9-10; Religion 59-60; or Sociology and Anthropology 1-2. (Those offering for admission two or more acceptable senior high school units in the Social Studies may be exempted from this requirement)	6
Other Courses	Psychology 1 Psychology 23 Speech 1 or 11 Statistics 53	6 3 3 3
Elective		4 to 6
Total		64

2. HOME ECONOMICS

The following two-year curriculum prepares for the Bachelor of Science in Home Economics curriculum in the School of Education:

	Semester Hours
English	English 1, 2 6
	English 51-52, 71-72; Speech 1, 2 (1, 11)..... 6
Physical Education ..	See pages 53-54 for statement of requirement... 4
Psychology	Psychology 1, 29..... 6
Science	Biology 1-2, Chemistry 11-12, Physics 11, 12... 6-8
Social Studies*	Economics, History, Political Science, or Sociology and Anthropology 12
Major Prerequisites ..	Home Economics 1, 22 (Freshman year)..... 6
	Home Economics 51, 62 (Sophomore year). .. 6
Academic Electives ..	(Freshman year) 6
	(Sophomore year) 4-6
<hr/>	
Total.....	64

3. PHYSICAL EDUCATION FOR MEN

The following two-year curriculum prepares for the Bachelor of Science in Physical Education curriculum in the School of Education:

	Semester Hours
English	English 1, 2 6
Physical Education	1-2, 11-12 4
Science	Biology 1-2 or Zoology 1-2 (Freshman year) . . 6 or 8

* Courses are to be selected with the approval of the adviser in the Department of Home Economics.

Social Studies	History 39-40, 71-72; Political Science 1 and 9, 1 and 10, or 9-10; or Sociology and Anthropology 1-2 (Freshman year)	6
	Economics, History, or Political Science (Sophomore year)	6
Major Prerequisites ..	Physical Education 43-44, 47; Speech 1 or 11 (Freshman year)	9
	Physical Education 45-46, 49, 50, 58; Psychology 1, 22 (Sophomore year)	18
Elective		7-9
Total		64

4. PHYSICAL EDUCATION FOR WOMEN

The following two-year curriculum prepares for the Bachelor of Science in Physical Education curriculum in the School of Education:

Science in Physical Education curriculum in the School of Education		Semester Hours
English	English 1, 2.....	6
	English 51-52, 71-72, or 91-92.....	4
Physical Education ..	1-2, 11-12	6 or 8
Science	Biology 1-2 or Zoology 1-2.....	6 or 8
Social Studies	History 39-40, 71-72; Political Science 1 and 9, 1 and 10, or 9-10; or Sociology and Anthro- pology 1-2	8
Major Prerequisites ..	Physical Education 43-44 (Freshman year)....	4
	Physical Education 49, 50, 51-52; Psychology 1, 22 (Sophomore year).....	16
Academic Electives ..	(Each year)	6 or 8
Total.....		64

D. SCHOOL OF GOVERNMENT:

1. ACCOUNTING AND BUSINESS ADMINISTRATION

The following two-year curriculum prepares for the Bachelor of Arts in Government curricula in Accounting and in Business Administration in the School of Government:

Arts in Government Administration in the School of Government:		Semester Hours
Accounting	Accounting 1-2	6
English	English 1, 2, 11	9
Foreign Language	See pages 69-70 for foreign language requirement	12
Physical Education	See pages 53-54 for statement of requirement	12
Social Studies	Economics 1-2; Political Science 9-10.....	3
Speech	Speech 1	3
Statistics	Statistics 51, 52.....	3
Elective*	(Students interested in Foreign Commerce include Geography 51).....	12
Total		64

* Credit is not given for courses elected in Physical Education or Secretarial Studies.

2. FOREIGN AFFAIRS AND PUBLIC AFFAIRS

The following two-year curriculum prepares for the Bachelor of Arts in Government curricula in Foreign Affairs and Public Affairs in the School of Government:

	Semester Hours
English English 1, 2.....	6
Foreign Language ... See pages 69-70 for foreign language requirement	12
Mathematics, Science, Biology, Botany, Chemistry, Geology, Mathematics, Physics, Statistics, or Zoology.....	6 to 8
Physical Education .. See pages 53-54 for statement of requirement...	4
Social Studies Economics 1-2; History 39-40, 71-72; Political Science 9-10	24
Elective* (To satisfy minimum required credits. Students interested in Foreign Service include Geography 51)	10 to 12
Total.....	64

3. BUSINESS AND ECONOMIC STATISTICS

The following two-year curriculum prepares for the Bachelor of Arts in Government curriculum in Business and Economic Statistics in the School of Government:

	Semester Hours
Accounting Accounting 1-2	6
English English 1, 2.....	6
Foreign Language ... See pages 69-70 for foreign language requirement	12
Mathematics Mathematics 31 and prerequisites	12
Physical Education .. See pages 53-54 for statement of requirement...	4
Social Studies Economics 1-2; Philosophy 51-52.....	12
Statistics Statistics 51 or 91.....	3
Elective*	9
Total.....	64

II. VOCATIONAL CURRICULA

In addition to the above curricula, all of which prepare for admission to upper division colleges and schools, the Junior College offers the following two-year terminal courses.

The curricula in Accounting and Secretarial Studies lead to the degree of Associate in Arts. The curricula in Home Economics and Physical Sciences lead to the degree of Associate in Science.

* Credit is not given for courses elected in Physical Education or Secretarial Studies

1. ACCOUNTING

The required work may be completed in two calendar years on a full-time basis or in three calendar years on a part-time basis, with the approval of the adviser.

	Semester Hours
Accounting Accounting 1-2, 101, 111, 121-22, 161, 171, 181, 191, 193	33
Business Administration Business Administration 131, 161, 162	9
Economics Economics 1-2	6
English English 1, 2	4
Physical Education See pages 53-54 for statement of requirement...	6
Elective To be selected with the approval of the adviser	6
Total	64

2. HOME ECONOMICS

	Semester Hours
English English 1, 2	6
..... English 51-52, 71-72, 91-92, Russian 91-92; Speech 2 (1, 11)	6
..... English 11 or Secretarial Studies 51	3
Home Economics Home Economics 1, 22, 51, 62	12
Physical Education See pages 53-54 for statement of requirement...	4
Psychology Psychology 1	3
Secretarial Studies Secretarial Studies 1, 2	6
Home Economics Elective*	0-12
Elective*	0-12
Total	64

3. PHYSICAL SCIENCES

This curriculum is designed for part-time students who do not wish to extend their collegiate education beyond 64 semester hours of work. All other students interested in the study of physical science should follow the pre-Columbian College Science curriculum.

	Semester Hours
Chemistry Chemistry 11, 12, 21	12
English English 1, 2, 11	9
Mathematics Mathematics 3, 6, 12, 29, 30, 31	12-18
Mechanical Engineering Mechanical Engineering 10	8
Physical Education See pages 53-54 for statement of requirement...	4

* Courses are to be selected with the approval of the adviser in the Department of Home Economics.

Physics	Physics 11, 12, 13, 16, 55.....	15
Elective	(Speech 1, Economics 1-2 suggested)	4-10
Total.....		64

4. SECRETARIAL STUDIES

	Semester Hours
English	English 1, 2..... 6
	English 51-52, 71-72, 91-92, Russian 91-92 .. 6
Physical Education ..	See pages 53-54 for statement of requirement... 4
Secretarial Studies*	Secretarial Studies 1, 2, 11, 12, 15, 16, 51, 54.. 24
Social Studies	Economics 1-2, Geography 51, 52, History 39-40, 71-72, Political Science 9-10, or Sociology and Anthropology 1-2 6
General	Accounting 1 3
	Speech 11 3
Elective	(To be selected with the approval of the adviser) 12
<hr/>	
Total.....	64

Examinations for Waiving Curriculum Requirements†

A student desiring to omit a required course may take such examination as the department prescribes, and, on passing satisfactorily, he may be relieved of the curriculum requirements in that subject and may qualify for registration in an advanced course. Passing this examination does not entitle the student to any hours of credit toward the degree. A student desiring to take such examinations should make written request of the Dean and pay the required fee at the Office of the Treasurer before the date of the examination specified in the University calendar.

HONORS

The degree of Associate in Arts or Associate in Science may be conferred "with distinction" upon the student who has a quality-point index of 3.50 or higher, provided that student has been in residence at the University for 30 hours, 15 of which must have been taken in the Junior College at the time the index is calculated.

* Qualified students, upon the approval of the adviser or the satisfactory completion of a placement test, may waive Secretarial Studies 1, 11, and 12. Other courses, approved by the adviser, will be substituted.

† This provision does not apply to the premedical student, all of whose required premedical work must be taken in a recognized college of arts and sciences.

COLUMBIAN COLLEGE

THE FACULTY AND STAFF OF INSTRUCTION •

Calvin Darlington Linton, Ph.D., *Dean of Columbian College*

Elmer Louis Kayser, Ph.D., LL.D., *Professor of European History*
Warren Reed West, Ph.D., *Professor of Political Science*
Francis Edgar Johnston, Ph.D., *Professor of Mathematics*
Benjamin Douglass Van Evera, Ph.D., Sc.D., *Professor of Chemistry*
Mitchell Dreese, Ph.D., *Professor of Educational Psychology*
Merle Irving Protzman, Ph.D., *Professor of Romance Languages*
Florence Marie Mears, Ph.D., *Professor of Mathematics*
Wood Gray, Ph.D., *Professor of American History*
Thelma Hunt, Ph.D., M.D., *Professor of Psychology*
Ira Bowers Hansen, Ph.D., *Professor of Zoology*
Paul William Bowman, Ph.D., *Professor of Biology*
Arthur Edward Burns, Ph.D., *Professor of Economics*
John Withrow Brewer, Ph.D., *Professor of International Law*
Paul Kenneth Smith, Ph.D., *Professor of Pharmacology*
Harold Loran Geisert, Ph.D., *Professor of Sociology and Anthropology*
Samuel Nathaniel Wrenn, Ph.D., *Professor of Chemistry*
Charles Rudolph Naeser, Ph.D., *Professor of Chemistry*
Howard Maxwell Merriman, Ph.D., *Professor of American Diplomacy*

History

Ernest Sewall Shepard, A.M., *Professor of English Literature*
Fred Salisbury Tupper, Ph.D., *Professor of English Literature*
Chester Elwood Leese, Ph.D., *Fry Professor of Physiology*
Donald Stevenson Watson, Ph.D., *Professor of Economics*
Calvin Darlington Linton, Ph.D., *Professor of English Literature*
Angus MacIvor Griffin, Ph.D., *Professor of Bacteriology*
Charles Edward Gauss, Mus.B., Ph.D., *Elton Professor of Philosophy*
† Ira Rockwood Telford, Ph.D., *Professor of Anatomy*

• The President of the University, the Dean of Faculties, the Dean of the College, the Registrar of the University, the Director of Admissions of the University, the Professors, Associate Professors, and Assistant Professors constitute the Faculty

† On sabbatical leave spring semester 1959/60.

- Donald Chenoweth Kline, B.Arch., M.F.A., *Professor of Art*
 Charles William Cole, Ph.D., *Professor of American Literature*
 Everett Herschel Johnson, Ph.D., *Professor of Statistics*
 George Martin Koehl, A.M., *Professor of Physics*
 Lubin Poe Leggette, A.M., Ed.D., *Depew Professor of Speech*
 Joseph Richard Sizoo, A.M., D.D., Litt.D., LL.D., L.H.D., S.T.D., *Milbank Professor of Religion*
 Robert Dale Campbell, Ph.D., *Professor of Geography*
 John Francis Latimer, Ph.D., *Professor of Classical Languages and Literatures*
 *Roderic Hollett Davison, Ph.D., *Professor of European History*
 Calvin Weir Pettit, Ph.D., *Professor of Speech*
 Wolfgang Herbert Kraus, Dr.Jur., S.J.D., *Professor of Political Science*
 Robert Corbin Vincent, Ph.D., *Professor of Chemistry*
 Edith Elizabeth Mortensen, Ph.D., *Professor of Zoology*
 William Frederick Sager, Ph.D., *Professor of Chemistry*
 Lewis Slack, Ph.D., *Professor of Physics*
 Charles Adrian Michael Hogben, M.D., Ph.D., *Professor of Physiology*
 George Elbert McSpadden, Ph.D., *Professor of Romance Languages*
 Ross Pelton Schlabach, Jr., M.S., *Professor of Journalism*
 Russell Bradford Stevens, Ph.D., *Professor of Botany*
 Robert Hamilton Moore, Ph.D., *Professor of English Composition*
 Reuben Esselstyn Wood, Ph.D., *Professor of Chemistry*
 James Harold Coberly, Ph.D., *Professor of American Literature*
 Herbert Jehle, Dr.Ing., *Visiting Professor of Physics*
 Harold Frederick Bright, Ph.D., *Professor of Statistics*
 Wolfram Karl Legner, Ph.D., *Professor of German*
 Nels David Nelson, Ph.D., *Professor of Mathematics*
 Geza Teleki, Ph.D., *Professor of Geology*
 Isidor Heller, Ph.D., *Professor of Mathematics*
 Edward Campion Acheson, Ph.D., *Associate Professor of Finance*
 †Gretchen Louisa Rogers, Ph.D., *Associate Professor of German*
 ‡Curtis Edward Tuthill, Ph.D., *Associate Professor of Psychology*
 George Francis Henigan, Jr., Ph.M., *Associate Professor of Speech*
 Edwin Lockwood Stevens, A.M., *Associate Professor of Speech*
 Sam Clark Munson, Ph.D., *Associate Professor of Biology*
 Carr Bartleson Lavell, A.M., *Associate Professor of Sociology*
 Willard Edmund Caldwell, Ph.D., *Associate Professor of Psychology*
 James Norman Mosé, A.M., *Associate Professor of Psychology*
 Rafael Supervia, Doctor en derecho, *Associate Professor of Spanish*

* On leave of absence spring semester 1959-60.
 † On sabbatical leave spring semester 1959-60.
 ‡ On sabbatical leave 1959-60.

- *William Columbus Davis, Ph.D., *Associate Professor of Latin American History*
 Clifton Earl Olmstead, A.B., Th.D., *Associate Professor of Religion*
 Ronald Bettes Thompson, Ph.D., *Associate Professor of European History*
 Philip Henry Highfill, Jr., Ph.D., *Associate Professor of English Literature*
 John Gage Allee, Jr., Ph.D., *Associate Professor of English Philology*
 Theodore Peter Perros, Ph.D., *Associate Professor of Chemistry*
 John Whitefield Kendrick, Ph.D., *Associate Professor of Economics*
 Richard Catlin Haskett, Ph.D., *Associate Professor of American History*
 *Wilson Emerson Schmidt, Ph.D., *Associate Professor of Economics*
 William Edward Schmidt, Ph.D., *Associate Professor of Chemistry*
 *David Gover White, B.Chem.Eng., Ph.D., *Associate Professor of Chemistry*
 John Palmer Reesing, Jr., Ph.D., *Associate Professor of English Literature*
 James Willis Robb, Ph.D., *Associate Professor of Romance Languages*
 William Graham Clubb, Ph.D., *Associate Professor of French*
 Thomas Phillip George Liverman, Ph.D., *Associate Professor of Mathematics*
 Claude Yves Meade, Ph.D., *Associate Professor of Romance Languages*
 Robert Crumpton Willson, A.B., *Associate Professor of Journalism*
 Helen Bates Jakobson, B.S., *Associate Professor of Russian*
 Harland Walter Westermann, A.M., *Associate Professor of Geography*
 Alton Harold Desmond, Ph.D., *Associate Professor of Zoology*
 Richard Ernest Murphy, Ph.D., *Associate Professor of Geography*
 Hugh Linus LeBlanc, Ph.D., *Associate Professor of Political Science*
 Richard Walton Stephens, Ph.D., *Associate Professor of Sociology and Anthropology*
 Laurence Pereira Leite, A.M., *Associate Professor of Art*
 Robert Harris Walker, Jr., Ph.D., *Associate Professor of American Literature*
 Howard Rowland Ludden, A.M., *Assistant Professor of Political Science*
 John William Skinner, Ph.D., *Assistant Professor of Economics*
 Eva Mayne Johnson, Ph.D., *Assistant Professor of Psychology*
 James Cecil King, Ph.D., *Assistant Professor of German*
 William Laverne Marsh, B.S., M.D., *Assistant Professor of Pathology*
 Richard Harold Schlagel, Ph.D., *Assistant Professor of Philosophy*
 Clarence William Schimelpfenig, Ph.D., *Assistant Professor of Chemistry*
 Rudolph Hugh, Ph.D., *Assistant Professor of Bacteriology*
 John Lyle Prather, Ph.D., *Assistant Professor of Physics*

* On sabbatical leave spring semester 1959-60.

COMMITTEES •

THE DEAN'S COUNCIL †

1960

Harland Walter Westermann
James Cecil King

1961

Fred Salisbury Tupper
Roderic Hollett Davison

1962

Robert Corbin Vincent
Alton Harold Desmond

COMMITTEE ON ADMISSION AND ADVANCED STANDING

Calvin Darlington Linton, *Chairman*Edith Elizabeth Mortensen, *Secretary*

Charles William Cole

William Frederick Sager

John Whitefield Kendrick

COMMITTEE ON THE USE OF CORRECT ENGLISH

Robert Hamilton Moore, *Chairman*

George Francis Henigan, Jr.

Muriel Hope McClanahan

John Gage Allee

Robert Crumpton Willson

COMMITTEE ON SCHOLARSHIP

Florence Marie Mears, *Chairman*

Samuel Nathaniel Wrenn

Howard Maxwell Merriman

John Palmer Reesing, Jr.

William Graham Clubb

COMMITTEE ON STUDIES

The Dean of the College, *Chairman*Fred Salisbury Tupper
Richard Catlin Haskett

Edith Elizabeth Mortensen

William Edward Schmidt

GENERAL INFORMATION

INTRODUCTORY

Columbian College was founded in 1821. James Monroe, then President of the United States, aided in obtaining the charter from Congress which established "The Columbian College in the District of Columbia" for the "sole and exclusive purpose of educating youth in the English,

• The Dean of Columbian College is a member ex officio of all committees.
† Elected by the Faculty.

learned and foreign languages, the liberal arts, sciences and literature", with full power to confer all degrees "usually granted and conferred in colleges".

In 1930, when the Junior College was established, the name "Columbian College" was bestowed upon the senior college of liberal arts.

THE COLUMBIAN COLLEGE PROGRAM

Columbian College is that branch of the University which grants the Bachelor's and Master's degrees in the liberal arts. Its purpose is to enable the student to develop harmoniously both his particular abilities and his general awareness as a human being. It demands of the student a thorough acquaintance with one major area of learning and at the same time an understanding of how that field of specialization fits into the larger context of the scientific, social, and moral problems which confront modern man. It stresses not merely expertness but that broadly enlightened expertness which encourages its graduates to grow through the years in ability and wisdom.

The program is a contemporary application of the historic liberal arts tradition. A particular vitality and meaning are imparted to it by the fact that The George Washington University is situated in the cosmopolitan capital city of a nation to which, increasingly, the world looks for leadership. Here, uniquely, the liberal arts tradition is put to the test of contact with reality.

REGULATIONS

Students in Columbian College are subject to, and are expected to familiarize themselves with, the regulations regarding ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 13-29, and the University regulations stated on pages 50-58.

PREREQUISITES

It is assumed that a student entering Columbian College has met the requirements of the Junior College under the *Arts and Letters* curriculum or the *Science* curriculum. (See the Junior College section of the CATALOGUE.) Following is a summary of these prerequisites:

The *Arts and Letters* curriculum: (1) English composition (6 semester hours) and an additional year course (6 semester hours) in English. American, European, Classical, or any other foreign literature. (2) Two college years (at least 12 semester hours) of a single foreign language or the equivalent (see foreign-language requirement, pages 67-70) are required. A transfer student who has had foreign-language courses in another institution meeting 4 or 5 times a week may have acquired as much as 12 semester hours in a foreign language without having taken

four semesters (two full years). Such a student is required to take additional work here in the same language until he has completed four semesters (or an equivalent combination of high school years and college semesters). (3) At least one year (6 semester hours) in social studies, chosen from first-group courses in History, Political Science, Economics, Sociology and Anthropology, or Geography, is required. (4) At least one year (6 or 8 semester hours) of a laboratory science (Biology, Botany, Chemistry, Geology, Physics, or Zoology) is required.

The remaining hours of the Junior College program (roughly a minimum of 22 to 24 hours) should be devoted to the prerequisite courses required by the prospective major department (as stated following the departmental staff in the courses of instruction section of the CATALOGUE) or recommended by the advisers in the field-of-study major (see pamphlets prepared by the respective advisers), together with appropriate electives. Electives in Art, Philosophy, or Religion are recommended.

The *Science* curriculum requirements in English are the same as those of the Arts and Letters curriculum. A year course of social study is required. The foreign-language requirement is the same as for the Arts and Letters curriculum, except that French, German, or Russian is specified. At least 6 semester hours in Mathematics must be taken; additional work in Mathematics is required of prospective majors in Chemistry or Physics. In science, the student should take courses in both biological and physical sciences, bearing in mind the prerequisites stated by the department under which he expects to major, as well as specified prerequisites in certain departments (such as Mathematics and Chemistry for majors in Physics, or Mathematics and Physics for majors in Chemistry).

A transfer student admitted to Columbian College with deficiencies in freshman or sophomore work (whether in amount or in distribution of courses), corresponding to the programs outlined above, is required to begin to make up such deficiencies immediately upon admission to Columbian College, and to carry courses toward this end each semester until all the general education requirements described above are satisfied. Students transferring from the School of Government must complete pre-Columbian College requirements in science and in literature as prescribed in the Arts and Letters curriculum. Electives in Art, Philosophy, or Religion are recommended.

AMOUNT OF WORK

A full-time student who is not on probation may take ordinarily not more than 17 semester hours. A student employed more than 24 hours a week, who is not on probation, may take not more than 10 hours.

A full-time student whose quality-point index is 3.50 or higher may take not more than 19 hours. An employed student who meets the same standard may take not more than 12 hours.

A student previously unemployed who accepts employment subsequent to registration or at any time during a semester is required to report that fact immediately to the Dean, in order that adjustments in schedule may be made, if necessary, to bring his program within the Faculty's limitations upon the amount of work to be carried by an employed student.

ATTENDANCE

The student is held responsible for all the work of the courses in which he is registered, and all absences must be excused by the instructor in charge before provision is made for the student to make up the work missed. Excessive absence in any course will lead to loss of credit in that course, even though other requirements, such as tests, term papers, and examinations, are met.

CLASSIFICATION OF STUDENTS

A student who has completed less than 30 semester hours in Columbian College, and who has registered his major at the Office of the Registrar is classed as a *junior*. A student who has completed 30 hours in Columbian College, including at least one course in his major, is classed as a *senior*. A student who has satisfactorily completed the work for the Bachelor's degree, and whose program of study has been approved and filed in the Office of the Registrar, is classed as a *master in course*.

INDEPENDENT STUDY PLAN

Under the independent study plan a student of demonstrated capacity with special interest in the subject matter of a course, may be permitted to undertake independent study under the personal direction of an instructor, in accordance with the rules of the department or departments concerned. Credit under this plan is limited to the specific course-credits as designated in the list of courses of instruction in the CATALOGUE.

CORRESPONDENCE AND HOME-STUDY COURSES

No credit is given for work done by correspondence or in home-study courses.

THE BACHELOR'S DEGREES

Upon the satisfactory completion of the undergraduate requirements at Columbian College, the degree of Bachelor of Arts, Bachelor of Science, or Bachelor of Science in Medical Technology is conferred.

In cooperation with the School of Medicine a seven-year curriculum

leading to the combined degrees of Bachelor of Arts and Doctor of Medicine is offered.

REQUIREMENTS FOR THE DEGREES

RESIDENCE

For the residence requirement, see pages 54-55. Students intending to transfer to Columbian College from a non degree-granting division of the University should note specifically the regulation concerning transfer within the University (see pages 52 and 53).

SCHOLARSHIP

The system of grading and of computing scholarship is described in detail on pages 50 and 51.

In order to graduate, a student must have a general quality-point index of at least 2.00. In addition, the student with a Departmental Major must have a quality-point index of at least 2.50 in his major subject. Grades in courses taken at other institutions are not considered in computing the quality-point index. The student with a Field-of-Study Major meets the qualitative requirement by passing the Major Examination.

In computing the quality-point index in the major, all second-group and third-group courses in the major field taken at The George Washington University are included, even though minimum requirements for the major may have been exceeded, except when registration for graduate credit is approved. Grades received in first-group courses are not considered.

Probation.—A student must maintain a quality-point index of at least 2.00, or be placed on probation. A student remains on probation as long as his quality-point index is below 2.00, or until his probation is removed by the Committee on Scholarship.

Suspension.—A student who has a quality-point index below 1.50 or who is placed on probation for a third semester, whether successive or after an interval, is suspended.

A student suspended for poor scholarship may apply for readmission after an interval of one calendar year. He must then submit evidence to the Committee on Admission and Advanced Standing that during his absence from the University he has so conducted himself as to indicate that he will profit by readmission. A student suspended twice for poor scholarship will not be readmitted.

The foregoing scholarship rules are applied to a student with a limited schedule only when he has undertaken a minimum of 15 semester hours.

CURRICULUM REQUIREMENTS

The curriculum requirements for the Bachelor's degrees include at least 60 semester hours beyond the requirements of the Junior College (the curriculum in *Arts and Letters* or in *Science*) and the satisfactory completion of the major. Each program must be approved by the major adviser and by the Dean.

At least 24 hours of the last 60 hours counted toward the Bachelor's degree must be taken in subjects* not included in the major field or department. The student should consult his major adviser at each registration regarding the inclusion in his program of suitably distributed electives.

Except for students registered for the combined degrees of Bachelor of Arts and Doctor of Medicine, or for the degree of Bachelor of Science in Medical Technology, not more than 12 semester hours of professional courses may be included in the 124 hours required for the Bachelor's degrees in Columbian College. Columbian College students electing professional courses under this rule must obtain the approval, in advance, of the Dean's Council of Columbian College. Ordinarily courses in Physical Education, Secretarial Studies, and technical courses in Education will not be approved for credit toward a degree in Columbian College.

After selecting a curriculum, a student may not change to another except by permission of the Dean and on condition that he fulfill the requirements of the curriculum to which he changes which are in effect at the time the change is approved by the Dean.

Each student is required to select and file with the Registrar a choice of major upon entering Columbian College. He may change the major only with the consent of the Dean and of the department or committee concerned, and must meet the requirements for the new major which are in effect at the time the change is approved by the Dean.

First group courses may be required as prerequisites to undergraduate major programs, but because of their introductory character may not be counted as part of such programs. (See "Explanation of Course Numbers.")

Students transferring from other institutions or from other schools, colleges, or divisions in this University with major requirements wholly or substantially met will, nevertheless, be required to complete satisfactorily at least 12 semester hours of approved work in the major field in Columbian College in order to receive a Bachelor's degree. This work will count as part of the minimum residence requirement.

* Art, Biology, Botany, Chemistry, Classical Languages and Literatures, Economics, Geography, Geology, German Languages and Literatures, History, Journalism, Mathematics, Philosophy, Physics, Political Science, Psychology, Religion, Romance Languages and Literatures, Slavic Languages and Literatures, Sociology and Anthropology, Speech, Statistics, Zoology.

Examinations for Waiving Curriculum Requirements.—A student desiring to omit a required or prerequisite course may take such examination as the department prescribes, and, on passing satisfactorily, he may be relieved of the curriculum or prerequisite requirement in that subject and may qualify for registration in an advanced course. Passing of this examination shall not entitle him to any credit toward a degree. A student desiring to take such examination should make written request of the Dean and pay the required fee at the Office of the Treasurer before the date of the examination specified in the University calendar.

Use of Correct English.—Any student whose English in any course whatever is deemed unsatisfactory may be reported by the instructor to the Dean and to the Committee on the Use of Correct English. The Chairman of the Committee may assign supplementary work, without academic credit, varying in amount with the needs of the student. If the work prescribed is equivalent to a course, the regular tuition fee is charged. The granting of a degree may be delayed by failure to make up any such deficiency in English to the satisfaction of the Committee and the Dean.

GRADUATE RECORD EXAMINATIONS

During the final semester of the senior year students in Columbian College are required to take the following Graduate Record Examinations: the Aptitude Test, which provides a measure of general scholastic ability at the graduate level; and Area Tests (achievement), which measure breadth of knowledge and understanding in three broad areas of the liberal arts: Natural Science, Social Science, and the Humanities. (For further information concerning the Graduate Record Examinations, see page 55.)

BACHELOR OF ARTS

The work of the junior and senior years, including a major in one of the following major fields, must be approved by the major adviser and by the Dean.

Major Fields.—American Thought and Civilization; Art (1) Art History and Theory, (2) Drawing and Painting, (3) Sculpture, and (4) Commercial Art; Biology; Botany; Chemistry; Economics; English Literature; French Language and Literature; Geography; Geology; Germanic Languages and Literatures; History; Journalism; Latin American Civilization; Mathematics; Philosophy; Physics; Political Science; Psychology; Religion; Sociology and Anthropology; Spanish American Literature; Spanish Language and Literature; Speech (Speech or Dramatic Art); Statistics; Zoology.

Combined Degrees of Bachelor of Arts and Doctor of Medicine.—A candidate for the combined degrees of Bachelor of Arts and Doctor of

Medicine must: (1) complete the Medical School entrance requirements (see pages 17-18); (2) fulfill the Junior College Arts and Letters requirements (see page 70); (3) fulfill the Columbian College residence requirement of at least 30 semester hours; (4) obtain the approval of the Dean of Columbian College at the time of entering the School of Medicine; (5) obtain the recommendation of the Dean of the School of Medicine at the completion of all prescribed courses in the first year of the School of Medicine, at which time the degree of Bachelor of Arts will be conferred (professional work taken at another institution will not satisfy the major requirement for the combined degrees); (6) maintain throughout the entire course the scholarship level required for graduation.

BACHELOR OF SCIENCE

The work of the junior and senior years, including a major in one of the following sciences, must be approved by the major department or division and by the Dean.

Biological Sciences

Biology
Botany
Zoology

Physical Sciences

Chemistry
Geology
Mathematics
Physics
Statistics

THE UNDERGRADUATE MAJOR

There are two types of undergraduate majors: the field-of-study major and the departmental major.

THE FIELD-OF-STUDY MAJOR

Each Field-of-Study Major covers a carefully worked out field of coordinated study and is under the supervision of the appropriate department and the Columbian College Committee on Studies.

The *Field-of-Study Major* requires no specific number of semester hours, no specific program of courses, and no specific quality-point index for the major, although the student is required to meet the overall general requirements for the degree (at least 124 semester hours with a quality-point index of at least 2.00). The Major Examination in the Field-of-Study Major replaces all of the traditional quantitative and qualitative requirements for a major. Ability to pass the Major Examination is assumed to be a convincing demonstration that the student possesses the breadth, depth, and quality of knowledge of his major usually defined in terms of semester hours, courses, grades, and a better-than-average quality-point index. A pamphlet prepared under the direction

the adviser in the field of study and obtainable either from the adviser or from the Office of the Dean of Columbian College provides the information needed by the prospective student, who should place himself under the direction of the appropriate adviser immediately upon completing Junior College work and beginning his junior year (the first senior-college year) in Columbian College.

The Field-of-Study Major places special emphasis on the intellectual development of the individual student. Programs in the same major may vary, depending upon the individual student's background, previous study, reading habits, and aptitudes. The student is expected to consult his adviser frequently, and the special proseminar offered in the field gives him further opportunity for individual advice and direction in pursuing a program especially adapted to his needs and abilities. A close student-adviser relationship is essential for the student's success under the Field-of-Study Major plan.

The following Field-of-Study Majors are offered: (1) American Thought and Civilization, (2) Biology, (3) English Literature, (4) French Language and Literature, (5) History, (6) Latin American Civilization, (7) Philosophy, (8) Spanish American Literature, (9) Spanish Language and Literature, (10) Statistics, (11) Zoology.

The major in Biology extends broadly over the field of Biological Sciences and those in American Thought and Civilization and in Latin American Civilization involve studies in two areas, those of Languages and Literatures and of Social Sciences. The other Field-of-Study Majors, with the exception of the major in Spanish American Literature, replace departmental majors in their respective fields. A candidate for a Bachelor's degree with a major in Biology, English Literature, French Language and Literature, History, Philosophy, Spanish American Literature, Spanish Language and Literature, Statistics, or Zoology must elect a Field-of-Study Major.

Proseminar in the Major

For the convenience of the student a proseminar is offered in each field of study. This course, planned and administered by the professor or adviser responsible for the field, will advise, guide, and instruct the student in his reading, study, and laboratory exercises in order to assist him in gaining a coordinated knowledge of his field. It is a presentation of the content and methods of the major field as a whole through the organization and coordination of the knowledge obtained in the various formal courses in the major subject and of material not usually included in such courses. This course is not required. Six semester hours, but no qualitative grade, may be assigned. When registered in this course, the student will have the privilege of visiting, subject to the approval of the instructor, any other appropriate course offered in the College. (Regular

attendance in a course, either for credit or as an auditor, requires registration and payment of tuition.) Proseminars are open only to the student who has been accepted as a candidate under that specific major.

The Major Examination

The Major Examination will normally be taken by the student at the close of the senior year; in the case of a student on a limited schedule, the Major Examination may be taken not earlier than one calendar year before graduation. A student who fails to pass a Major Examination may, at the discretion of the Columbian College Committee on Studies, be reexamined at a later regular major-examination period. The Committee on Studies will have general supervision of the preparation, reading, and grading of Major Examinations. Major Examinations will be held each semester on dates fixed by the department or departments concerned, but in no case later than January 15 for the fall semester, May 15 for the spring semester, and August 7 for the summer session.

DEPARTMENTAL MAJORS

Departmental Majors, unlike *Field-of-Study Majors*, are specifically defined in terms of credit hours, required courses, and the attainment of a quality-point index of at least 2.50 in all second-group courses taken in the major field. The minimum specific requirements for Departmental Majors are listed below the staff of instruction of the department concerned in the section of the CATALOGUE devoted to courses of instruction. The Executive Officer of the Department, or designated departmental adviser, should be consulted at registration concerning the student's program of courses; and the entire program, including electives, must be approved by the Department. The student is also expected to consult the Executive Officer or adviser in all matters affecting his program of studies, such as changes, substitutions, or withdrawals, and especially concerning his progress in his courses. As far as possible the close student-adviser relationship developed in the *Field-of-Study Major* will be cultivated also in *Departmental Majors*.

Until further notice Departmental Majors will be offered in the following: Art (1) Art History and Theory, (2) Drawing and Painting, (3) Sculpture, and (4) Commercial Art; Botany; Chemistry; Economics; Geography; Geology; Germanic Languages and Literatures; Journalism; Mathematics; Physics; Political Science; Psychology; Religion; Sociology and Anthropology; Speech (Speech or Dramatic Art).

BACHELOR OF SCIENCE IN MEDICAL TECHNOLOGY

In cooperation with the University Hospital and the Department of Pathology of the School of Medicine, Columbian College offers work leading to the degree of Bachelor of Science in Medical Technology.

A candidate for the degree of Bachelor of Science in Medical Technology must fulfill the Junior College Medical Technology Curriculum (see page 72); fulfill the Columbian College requirements for degrees, including the residence requirement of at least 30 semester hours; complete the twelve-month Medical Technology Course in the University Hospital; and maintain throughout the entire course the scholarship level required for graduation.

Admission to the Columbian College degree program does not assure acceptance in the Hospital program. For further information, see pages 120 and 121.

THE MASTER'S DEGREES

Upon the satisfactory completion of the graduate requirements of Columbian College, the degree of Master of Arts, Master of Science or Master of Fine Arts is conferred.

DEFINITION OF THE MASTER'S WORK

The study leading to the Master's degree is a comprehensive survey of a field of knowledge. It is a continuation of the work of the student's undergraduate major and involves a greater acquaintance with scholarly method.

The student must satisfy certain minimum requirements as to previous preparation, residence, ability to read an approved modern foreign (European) language, and courses taken; but these requirements, while essential, are regarded primarily as qualifying measures. The student's knowledge of his field, as demonstrated by his thesis and by the results of his Master's Examination (together with such other examination involving special skills or techniques as the department or the Columbian College Committee on Studies may require), is the basis upon which the Master's degree is conferred.

MASTER OF ARTS

Graduate work leading to the degree of Master of Arts is offered in the following fields:

American Literary and Cultural History, Art History and Criticism, Bacteriology, Biochemistry, Biology, Botany, Chemistry, Chemotherapy, Economics, English and American Literature, English Literature, French Language and Literature, Geography, Geology, Germanic Languages and Literatures, History, Latin American Civilization, Mathematics, Museology, Pharmacology, Philosophy, Physics, Physiology, Political Science, Psychology, Religion, Religious Education, Sociology and Anthropology,

Spanish American Literature, Spanish Language and Literature, Speech Correction, Statistics, Zoology.

Special programs involving coordinated work in two or more departments may be arranged with the approval of the departments concerned and the Columbian College Committee on Studies.

MASTER OF SCIENCE

Graduate work leading to the degree of Master of Science is offered in the following fields:

Anatomy, Bacteriology, Biochemistry, Biology, Botany, Chemistry, Chemotherapy, Geology, Mathematics, Pharmacology, Physics, Physiology, Psychology, Statistics, Zoology.

Special programs involving coordinated work in two or more departments may be arranged with the approval of the departments concerned and the Columbian College Committee on Studies.

MASTER OF FINE ARTS

Graduate work is offered leading to the degree of Master of Fine Arts in the fields of painting and sculpture. (See the Department of Art.)

REQUIREMENTS FOR THE DEGREES

RESIDENCE

Normally, an academic year of residence in Columbian College is required, i.e., completion of a minimum of 30 semester hours of work including the thesis, which is counted as the equivalent of 6 semester hours of course work. Summer work may be counted in residence, but in no case may the period of residence aggregate less than twenty-seven weeks. Not more than 12 semester hours (which must be approved in advance by the Dean of Columbian College) may be taken in another school or division of this University, and such work may not be counted toward both a degree in that school or division and the Master's degree in Columbian College. *No part of the minimum requirement may be taken elsewhere.* All work for the degree of Master of Arts, Master of Science, or Master of Fine Arts must be completed within a maximum of three years, unless the Dean's Council considers the circumstances so unusual as to justify an extension of time.

SCHOLARSHIP

A Master's candidate must attain the grade of "Ex." (excellent) in at least 6 semester hours of the course requirements for the degree in order to receive the Master's degree.

A student whose scholarship is unsatisfactory may be suspended by the Dean upon recommendation of the department under which the student is working. A Master's candidate who accumulates 9 hours or more of "Unsat." (including grades of "C" or lower in prerequisite courses) will be automatically suspended. Regarding the system of grading, see pages 50 and 51.

PROGRAM OF STUDIES

The student's program of studies must be outlined in detail at the beginning of his work, in triplicate, on forms available at the Office of the Dean. Each program is subject to the approval of the department and the appropriate member of the Columbian College Committee on Studies. The program may be revised as the occasion requires, but any change necessitates a repetition of the procedures just described.

The candidate for the Master's degree ordinarily may specialize exclusively in the field of his choice. Any student, however, whose undergraduate training does not include at least one full year of work in each of the following areas of study: (1) mathematics or science (with or without laboratory), (2) social science, and (3) the humanities (literature, philosophy, art, music, or religion), must make up this deficiency in his general education before being admitted to candidacy for the Master of Arts degree. This last provision does not apply to candidates for the Master of Science degree.

Courses numbered from 1 to 100 may not be credited toward the Master's degrees, but may in certain instances be required as a basis for advanced work. At least 6 semester hours of the course work required for the Master's degree must be taken in courses numbered over 200. Courses numbered over 100 may be credited toward the degree, provided the completion of additional work has been certified by the appropriate officer of instruction. (See "Explanation of Course Numbers".)

A student who expects to continue his studies for the degree of Doctor of Philosophy after receiving the Master's degree is strongly advised to plan his program from the beginning so that work for the lower degree will constitute the initial stage of the doctoral discipline and, upon completion, will admit him to full status in the Graduate Council (see pages 100-101).

FOREIGN LANGUAGE REQUIREMENT

Before being admitted to candidacy the student must show that he has a reading knowledge (certified by the appropriate foreign-language department) of at least one modern foreign (European) language, selected by the department or committee under which he is studying. A student whose field is a modern foreign language or literature may not offer that language in satisfaction of the reading-knowledge requirement.

Any Master's candidate who chooses to meet the Master's language requirement in French, German, or Spanish and has not passed the French, German, or Spanish foreign language examination by the end of 15 attempted semester hours must register for French 49, German 49, or Spanish 49 as part of his next registration. The Master's reading examinations will be given at the first class meeting of French 49, German 49, and Spanish 49, again at the end of the courses, and on the last Saturday of the Summer Term; no student, however, will be permitted to take the examination after three unsuccessful attempts. Those enrolled in French 49, German 49, or Spanish 49 who pass the first examination are excused from the course and will receive a refund of tuition. Students who expect to take a reading examination in any approved language other than French, Spanish, or German should notify the Dean at the time of registration.

Students are reminded of the necessity for early satisfaction of this requirement, normally not later than the end of the first semester of registration for the degree.

ADMISSION TO CANDIDACY

A student must be admitted to candidacy before he begins the last half of his work for the Master's degree, i.e., not later than the completion of 15 semester hours of degree courses. Application for admission to candidacy is made on a form obtained at the Office of the Dean, and must be approved by the appropriate representative of the department or committee and by the Dean. If a prospective candidate, in his previous academic work, has not substantially satisfied the prerequisites for the Master's degree, including the undergraduate major as defined by the appropriate department or committee, he will not be admitted to candidacy until such deficiency has been made up. He may make up his deficiencies by electing appropriate courses in addition to those counted toward his degree.

THE THESIS

The thesis may be of a research, expository, critical, or creative type. The main purpose of a Master's thesis is to demonstrate the student's ability to make independent use of the information and training acquired through his other disciplines, and to furnish objective evidence of his constructive powers in his chosen field. Registration for the thesis must be no later than the beginning of the final year of preparation, unless the professor in charge of the thesis permits registration at the beginning of the final semester. The choice of the thesis subject must be approved by the professor in charge of the student's field and recorded in the Office

of the Registrar by the date announced in the University calendar. Registration for the thesis is ordinarily made on the basis of 3 hours for each of two successive semesters. In exceptional cases, and with the approval of the professor in charge of the thesis, the student may register for the entire 6 hours during a single semester. The thesis in its final form must be presented to the Dean, not later than the date announced in the University calendar. Printed copies of detailed regulations regarding the form and reproduction of the thesis (see pages 55-56) are available in the Office of the Dean.

Payment of tuition for the thesis entitles the candidate, during the academic year of registration, to the advice and direction of the member of the faculty under whom the thesis is to be written. In case a thesis is unfinished an additional successive academic year may be granted without further tuition payment. The student must, however, be registered in residence during this period. If the preparation of the thesis extends beyond the two-year period the student must register for it again, and pay tuition on the same basis as for a repeated course.

THE MASTER'S EXAMINATION

In addition to such other examinations as may be required, the candidate must pass a general written examination on the major subject. Examinations will be held on dates fixed by the department or committee, but in no case later than January 15 for the fall semester, May 15 for the spring semester, and August 7 for the summer session. The provisions of the field-of-study plan for undergraduate majors which concern the general examination for the major also apply to the Master's Examination. A candidate who fails to pass the Master's Examination may, in exceptional circumstances and with the specific approval of the Columbia College Committee on Studies, repeat the examination, but only after the lapse of one semester. If he fails a second time, no further opportunity to take the examination will be permitted.

THE GRADUATE COUNCIL

Arthur Edward Burns, Ph.D., *Dean and Chairman of the Graduate Council*

MEMBERS OF THE COUNCIL*

Elmer Louis Kayser, Ph.D., LL.D., *Professor of European History*
 Warren Reed West, Ph.D., *Professor of Political Science*
 Francis Edgar Johnston, Ph.D., *Professor of Mathematics*
 Benjamin Douglass Van Evera, Ph.D., Sc.D., *Professor of Chemistry*
 Mitchell Dreese, Ph.D., *Professor of Educational Psychology*
 Merle Irving Protzman, Ph.D., *Professor of Romance Languages*
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 Florence Marie Mears, Ph.D., *Professor of Mathematics*
 Wood Gray, Ph.D., *Professor of American History*
 Thelma Hunt, Ph.D., M.D., *Professor of Psychology*
 Ira Bowers Hansen, Ph.D., *Professor of Zoology*
 Paul William Bowman, Ph.D., *Professor of Biology*
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 Samuel Nathaniel Wrenn, Ph.D., *Professor of Chemistry*
 Charles Rudolph Naeser, Ph.D., *Professor of Chemistry*
 Howard Maxwell Merriman, Ph.D., *Professor of American Diplomatic History*
 Fred Salisbury Tupper, Ph.D., *Professor of English Literature*
 Chester Elwood Leese, Ph.D., *Fry Professor of Physiology*
 Donald Stevenson Watson, Ph.D., *Professor of Economics*
 Calvin Darlington Linton, Ph.D., *Professor of English Literature*
 Angus MacIvor Griffin, Ph.D., *Professor of Bacteriology*
 Carleton Raymond Treadwell, Ph.D., *Professor of Biochemistry*
 †Ira Rockwood Telford, Ph.D., *Professor of Anatomy*
 Robert Dale Campbell, Ph.D., *Professor of Geography*
 ‡Roderic Hollett Davison, Ph.D., *Professor of European History*
 Wolfgang Herbert Kraus, Dr. Jur., S.J.D., *Professor of Political Science*
 William Frederick Sager, Ph.D., *Professor of Chemistry*
 Lewis Slack, Ph.D., *Professor of Physics*

* The President of the University, the Dean of Faculties, and the Registrar of the University are members of the Council.

† On sabbatical leave spring semester 1959-60.

‡ On leave of absence spring semester 1959-60.

Charles Adrian Michael Hogben, M.D., Ph.D., *Professor of Physiology*
 George Elbert McSpadden, Ph.D., *Professor of Romance Languages*
 Russell Bradford Stevens, Ph.D., *Professor of Botany*
 Herbert Leonard Ley, Jr., M.D., M.P.H., *Professor of Bacteriology*
 Reuben Esselstyn Wood, Ph.D., *Professor of Chemistry*
 James Harold Coberly, Ph.D., *Professor of American Literature*
 Harold George Mandel, Ph.D., *Professor of Pharmacology*
 Harold Frederick Bright, Ph.D., *Professor of Statistics*
 Isidor Heller, Ph.D., *Professor of Mathematics*
 Mary Louise Robbins, Ph.D., *Professor of Bacteriology*
 Don Carlos Faith, Ph.D., *Professor of Educational Psychology*
 Nels David Nelson, Ph.D., *Professor of Mathematics*
 *Curtis Edward Tuthill, Ph.D., *Associate Professor of Psychology*
 James Norman Mosél, A.M., *Associate Professor of Psychology*
 †William Columbus Davis, Ph.D., *Associate Professor of Latin American*

History

Clifton Earl Olmstead, A.B., Th.D., *Associate Professor of Religion*
 Ronald Bettes Thompson, Ph.D., *Associate Professor of European History*

Philip Henry Highfill, Jr., Ph.D., *Associate Professor of English Literature*

Theodore Peter Perros, Ph.D., *Associate Professor of Chemistry*
 John Whitefield Kendrick, Ph.D., *Associate Professor of Economics*
 Richard Catlin Haskett, Ph.D., *Associate Professor of American History*
 †Wilson Emerson Schmidt, Ph.D., *Associate Professor of Economics*
 William Edward Schmidt, Ph.D., *Associate Professor of Chemistry*
 John Palmer Reesing, Jr., Ph.D., *Associate Professor of English Literature*

James Willis Robb, Ph.D., *Associate Professor of Romance Languages*
 William Graham Clubb, Ph.D., *Associate Professor of French*
 Clarke Davison, Ph.D., *Associate Professor of Pharmacology*
 Thomas Phillip George Liverman, Ph.D., *Associate Professor of Mathematics*

Hugh Linus LeBlanc, Ph.D., *Associate Professor of Political Science*
 Eugene Marshall Renkin, Ph.D., *Associate Professor of Physiology*

CONSULTANTS IN RESEARCH

Samuel Jacob Ajl, Ph.D., *Assistant Chief, Department of Bacteriology, Communicable Diseases Division, Walter Reed Army Institute of Research; Bacterial Physiology and Nutrition*
 Antonio Alonso, A.M., *Professor Emeritus of Spanish; Modern Spanish Literature*

* On sabbatical leave 1959-60.

† On sabbatical leave spring semester 1959-60

- Robert Allen Altenbern, Ph.D., *Biochemist, Medical Bacteriology Division, Fort Detrick*; Bacterial Physiology and Nutrition
- Robert Whitney Bolwell, Ph.D., Litt.D., *Professor Emeritus of American Literature*; Literary Nationalism
- George McSpadden Briggs, Ph.D., *Chief, Nutrition Unit, Laboratory of Biochemistry and Nutrition, National Institute of Arthritis and Metabolic Diseases*; Animal Nutrition
- Bernard Beryl Brodie, Ph.D., *Chief, Laboratory of Chemical Pharmacology, National Heart Institute*; Biochemical Detoxication
- Arthur Brown, Ph.D., *Chief, Virology II Branch, Fort Detrick*; Virology
- Dean Burk, Ph.D., *Head, Cytochemistry Unit, National Cancer Institute*; Tissue Respiration in Biochemistry
- John Joseph Burns, Ph.D., *Deputy Chief, Laboratory of Chemical Pharmacology, National Heart Institute*; Ascorbic Acid Metabolism
- William Robert Carroll, Ph.D., *Biochemist, Laboratory of Physical Biology, National Institute of Arthritis and Metabolic Diseases*; Chemistry and Metabolism of Proteins
- Robert Watkins Clarke, Ph.D., *Chief, Department of Surgical Physiology, Walter Reed Army Institute of Research*; Hemo-Dynamics
- Gerhard Colm, Dr. rer. pol., *Chief Economist, National Planning Association*; Public Finance; National Income
- Margaret Garritsen de Vries, Ph.D., *Economist*; International Finance
- William Rankin Duryee, Ph.D., *Research Professor of Physiology*; Cellular Physiology
- Francois Naftali Frenkiel, Ph.D., *Physicist, Applied Physics Laboratory, Johns Hopkins University*; Aerodynamics
- Henry Field Haviland, Jr., Ph.D., *Senior Staff Member, Brookings Institution*; International Relations, especially American Foreign Policy
- Roger Hilsman, Ph.D., *Chief, Foreign Affairs Division, Legislative Reference Service, Library of Congress*; International Relations
- Leon Jacobs, Ph.D., *Head, Section of Protozoal Diseases, National Institute of Allergy and Infectious Diseases*; Microbiology
- Lent Clifton Johnson, M.D., *Chief, Bone and Joint Pathology, Armed Forces Institute of Pathology, Walter Reed Army Medical Center*; Histology
- Solomon Kullback, Ph.D., *Chief, Research and Development Division, United States Department of Defense*; Statistics: Multivariate Analysis
- Bert Nichols La Du, Jr., M.D., Ph.D., *Senior Surgeon, United States Public Health Service, National Institute of Arthritis and Metabolic Diseases*; Amino Acid Metabolism
- Howard Maer Lenhoff, Ph.D., *Acting Chief, Biochemistry Section, Armed Forces Institute of Pathology, Walter Reed Army Medical Center*; Protein Biosynthesis

- Ladislau Laszlo Marton, Ph.D., *Physicist, Atomic Physics, Electronics Division, National Bureau of Standards; Electron Optics*
- Winfred Overholser, A.B., M.D., Sc.D., L.H.D., *Professor Emeritus of Psychiatry; Psychiatry: Problems of Treatment*
- Leland Wilbur Parr, Ph.D., *Professor Emeritus of Bacteriology; Coliform Bacteria and Antibiosis*
- Jacques Jacobus Polak, Ph.D., *Deputy Director, Research Department, International Monetary Fund; International Finance*
- Joseph Hiram Roe, Ph.D., *Professor Emeritus of Biochemistry; Carbohydrate Metabolism; Nutrition (emphasis on vitamins); Pathological Chemistry*
- Sanford Morris Rosenthal, M.D., *Chief, Section on Pharmacology and Toxicology, National Institute of Arthritis and Metabolic Diseases; Cardiovascular Shock*
- Leonard Peter Schultz, Ph.D., *Curator of Fishes, United States National Museum; Vertebrate Zoology: Ichthyology*
- Demitri Boris Shimkin, Ph.D., *Supervisory Statistician, Bureau of Census, United States Department of Commerce; Soviet Economics*
- Lyman Bradford Smith, Ph.D., *Associate Curator, Division of Phanerogams, Department of Botany, Smithsonian Institution; Taxonomy*
- Michael Joseph Surgalla, Ph.D., *Chief, Bacteriology I Branch, Medical Bacteriology Division, Fort Detrick; Immunology*
- Sidney Udenfriend, Ph.D., *Chief, Laboratory of Clinical Biochemistry, National Heart Institute; Amino Acid Metabolism*
- Erwin Paul Vollmer, Ph.D., *Endocrinology Consultant, Cancer Chemotherapy, National Service Center; Endocrinology*
- Ludwig von Sallmann, M.D., *Chief, Ophthalmology Branch, National Institute of Neurological Diseases and Blindness; Neuro-ophthalmology*
- Frank Mark Weida, Ph.D., *Professor Emeritus of Statistics; Theoretical Statistics: Probability and Sampling; Applied Statistics: Econometrics*
- Henry Welch, Ph.D., *Director, Division of Antibiotics, Food and Drug Administration, Department of Health, Education, and Welfare; Antibiotics*
- George Green Wright, Ph.D., *Chief, Immunology Branch, Fort Detrick; Immunology*
- Willard Hull Wright, D.V.M., Ph.D., *Scientist Director, United States Public Health Service; Chief, Laboratory of Tropical Diseases, National Institute of Allergy and Infectious Diseases; Parasitology*
- Ralph Aubrey Young, Ph.D., *Director, Division of Research and Statistics, Board of Governors, Federal Reserve System; International Finance*

GENERAL INFORMATION

INTRODUCTORY

The Graduate Council offers a program of advanced study and research leading only to the degree of Doctor of Philosophy. It was established in 1930 to replace the Graduate School which had formerly administered work for the Master's as well as the Doctor's degrees. The Graduate Council provides a doctoral discipline which moves freely across administrative lines dividing departments of instruction or fields of study. It gives personal supervision to a limited number of students, each of whom has his own consultative committee, examinations, and research direction.

ADMISSION PROCEDURE

For admission to doctoral work the student must possess adequate preparation for advanced study, together with acceptable personal qualities and a capacity for creative scholarship. Adequate preparation presupposes a satisfactory Bachelor's degree in the same general field as that proposed for doctoral study. Students beginning the first year of graduate study who plan to work towards the degree of Doctor of Philosophy are given provisional status in the Graduate Council. However, if these students wish, and if the Dean of the Graduate Council so advises, they may register for the Master's degree in the liberal arts (Columbian) college or in the School of Government during the first year and apply for transfer to full status in the Council upon completion of the Master's degree work.

Application forms may be obtained from the Office of the Dean of the Graduate Council. At the time of filing the application, either in person or by mail, the student should request that transcripts of all previous academic training be sent to the Office of the Dean, together with letters of recommendation. Each application, with transcripts and letters, is examined by a committee which, if the applicant is accepted, constitutes his Consultative Committee. This Committee supervises all aspects of the student's program and work, leading to the general examinations (Council Fellowship Examination).

THE PLAN OF WORK

The discipline for the degree is divided into three stages. (1) The first year of graduate study constitutes the initial stage, either in the Graduate Council on provisional status, or in Columbian College or the School of Government enrolled as a Master's candidate intending to gain full status in the Council.* (2) Full status in the Council follows completion of the first year of graduate study and culminates in the

* Students on a part-time basis will normally complete a year of graduate study in two years

Council Fellowship Examination. (3) The final stage is composed of research and investigation of a particular project in a special field, the presentation of the findings in a written dissertation, and the Final Examination.

LANGUAGE EXAMINATIONS

French and German are the normally required languages; reading proficiency must be demonstrated by examination. The Consultative Committees may allow either French or German to be replaced by another language important to the student's research interest. Language examinations may be taken soon after entrance, but the first one must be passed no later than the beginning of the second semester following admission. The second examination must be passed well before completion of work for the Council Fellowship Examination.

THE FIRST YEAR OF STUDY

A student who enters the Graduate Council on provisional status to undertake the first year of graduate study has his program planned by a Consultative Committee. If the first year of work is taken in Columbian College or the School of Government preparatory to gaining full status, Graduate Council advisers aid in planning the Master's program to fit the work into the doctoral program of the student. Upon satisfactory completion of the first year the student is eligible to apply for full status. Students who have completed a year of satisfactory graduate work at other universities are eligible to apply directly for full status in the Graduate Council.

STUDY FOR THE COUNCIL FELLOWSHIP EXAMINATION

At the beginning of the student's full status, the Consultative Committee is assigned to direct his work in an integrated group of fields of learning, usually five or six in number, deemed necessary to insure his breadth of knowledge, as well as to support the dissertation project in his central field. Members of the Consultative Committee advise the student concerning the scope and content of these supporting fields, and will assist him in preparation for his examination in them.

This advanced study in full status does not entail the taking of a second full year of graduate courses and seminars. No additional course work may be necessary in some cases; in any event, the Consultative Committee determines whether such additional course work is needed, and if so, how much. In this stage of the work the main emphasis in preparation is on conferences with committee members and independent study. Performance in the Council Fellowship Examination is the test

of the student's ability to enter upon the final stage of his doctoral discipline.

The examination is a series of written tests usually extending over a period of one week. The major portion of a day is given to each part of the examination covering one of the fields of study on the student's program. If the results of the examination are satisfactory the student is admitted as a Fellow of the Graduate Council, to pursue his specialized study and research under the supervision of a member of the Council.

RESEARCH, THE DISSERTATION, AND THE FINAL EXAMINATION

After the student has been inducted as a Fellow of the Council and his research program has been arranged, he is responsible only to the member of the Council who directs his research project. As a Fellow, he may attend general meetings of the Council and participate in the programs of research discussion, and enjoy unrestricted use of all the academic facilities of the University. When necessary, the Graduate Council makes provision for sending the Fellow to some other institution, library, or laboratory for special study in connection with his doctoral investigation.

The doctoral dissertation is required of all Fellows as evidence of ability to perform scholarly research and to interpret its results. No later than the date specified in the University calendar the candidate must submit to the Dean three complete copies of the dissertation together with a fourth copy of the summary. Printed copies of detailed regulations regarding the form and reproduction of the dissertation and its summary (see pages 55-56), are available in the Office of the Dean. The summaries of accepted dissertations will be printed in a numbered issue of the University BULLETIN. The successful candidate for the doctorate is required, before receiving his degree, to pay a fee to cover the expense of printing the summary of his dissertation.

When the completed dissertation has been approved by the Master and submitted to the Office of the Dean, the Fellow is presented for his final examination. This examination is oral and open to the public. The committee of examiners includes not only members of the Council competent in the research field or in closely related subjects, but also at least two qualified experts from other research institutions brought to the University to participate in the examination. If the Fellow satisfies the examining committee concerning the high quality and originality of his contribution to knowledge as well as his mastery of the scholarship and research techniques of his field, the Council recommends him for the degree of Doctor of Philosophy.

FIELDS OF RESEARCH

The following fields of research have been authorized by the Graduate Council as those in which doctoral investigations and dissertations may

be undertaken. The supporting fields of study required of all candidates for the degree of Doctor of Philosophy are specified for each individual student by his Consultative Committee before admission to study under the Council.

This list of fields is subject to such changes as the educational resources of the University may direct. The prospective student may address preliminary inquiries concerning his research interests to the member of the Council who is in charge of the field, or to the Dean of the Graduate Council.

LITERATURES AND LANGUAGES

American: Fiction	Coberly
American: Literary Nationalism	Bolwell
English: (1) Sixteenth Century Drama; (2) Seventeenth Century Drama	Tupper
English: Seventeenth Century Literature	Reeing
English: (1) Eighteenth Century Literature; (2) History of English Drama	Highfill
English: Twentieth Century Literature	Linton
Romance: Modern Spanish Literature	Alonso
Romance: (1) Romance Linguistics; (2) Spanish American Literature; (3) Spanish Literature	McSpadden
Romance: Seventeenth Century Literature	Protzman
Romance: French Literature since 1880	Clubb
Romance: (1) Spanish American Literature; (2) Modern Spanish Literature	Robb

SOCIAL SCIENCES

Economics

History of Economic Thought	Burns
(1) Economic Theory; (2) Economic Planning	Watson
International Economics	Schmidt
International Finance	Polak, Young, de Vries
National Income	Kendrick, Colm
Public Finance	Colm
Soviet Economics	Shimkin
Transportation	Kennedy

Geography

Area Synthesis	Campbell
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History

European: Diplomatic since 1815	Davison
European: Nationalism	Kayser
European: Russian and Soviet	Thompson
History of Religion in the United States	Olmstead

The Modern Near East
 Latin American
 United States: Diplomatic
 United States: (1) Social; (2) Economic
 United States: Political

Davison
 Davitt
 Merriman
 Gray
 Haskett

International Relations

Program includes work in Economics, History, and Political Science

Political Science

Comparative Government and Political Theory
 International Politics and Organization
 International Law: (1) War and Neutrality; (2) Arbitration
 International Relations
 International Relations, especially American Foreign Policy
 (1) The Political Process; (2) Political Controls over
 Administrative Agencies
 United States: (1) The Legislative Process; (2) Governmental
 Organization and Administration

Kraus
 Brewer
 Hilsman
 Haviland
 LeBlanc
 West

Psychology

Counseling and Guidance
 Military Counseling and Guidance
 Personnel Psychology
 (1) Psychological Measurements; (2) Abnormal Psychology
 Social Psychology

Dreese
 Faith
 Mosel
 Hunt
 Tutbill

MATHEMATICAL AND PHYSICAL SCIENCES

Chemistry

Analytical
 Geochemistry
 Inorganic
 Organic
 Physical: Kinetics and Electrochemistry
 Physical: Solubilities
 Physical-Organic: Reaction Mechanisms

Schmidt
 Nacser
 Nacser, Perrou
 Wrenn
 Wood
 Van Evers
 Sager

Physics

Electron Optics
 (1) Experimental Nuclear Physics; (2) Radioactivity
 Theoretical: Aerodynamics

Marton
 Slack
 Frenkiel

Mathematics

Algebra: Finite Groups
 Analysis
 Analysis: Functional Analysis
 Analysis: Infinite Series
 Mathematical Logic

Johnston
 Heller
 Liverman
 Mears
 Nelson

Statistics

Multivariate Analysis	Kullback
(1) Applied: Econometrics; (2) Theoretical: Probability and Sampling	Weida
(1) Psychometrics; (2) Managerial Statistics	Bright

MEDICAL SCIENCES

Anatomy

Gross Anatomy	Telford
Histology	Telford, Johnson
Neuro-ophthalmology	von Sallmann

Bacteriology

Antibiotics	Welch
Bacterial Physiology and Nutrition	Ajl, Altenbern
Coliform Bacteria and Antibiosis	Parr
Immunology	Surealla
Immunology	Wright
(1) Intestinal Microbiology; (2) Immunology: Antigenic Analysis	Griffin
Microbiology	Jacobs
Virology	Robbins, Ley, Brown

Biochemistry

Amino Acid Metabolism	La Du, Udenfriend
Animal Nutrition	Briggs
Ascorbic Acid Metabolism	Burns
Biochemical Detoxication	Brodie
(1) Carbohydrate Metabolism; (2) Nutrition (emphasis on vitamins); (3) Pathological Chemistry	Roe
Chemistry and Metabolism of Proteins	Carroll
Lipids	Treadwell
Protein Biosynthesis	Lehroff
Tissue Respiration	Buck

Pharmacology

Chemotherapy	Smith
Medicinal Chemistry	Mandel
Drug Metabolism	Davison, Mandel, Smith

Physiology

(1) Blood Pressure Studies; (2) Neuro-Muscular Studies	Leese
Cardiovascular Shock	Rosenthal
Cellular Physiology	Duryee
Endocrinology	Vollmer
(1) Gastrointestinal Physiology; (2) Electrolyte Metabolism	Hughes
Hemo-Dynamics	Clarke
Peripheral Circulation	Renkin

Psychiatry

Problems of Treatment (M.D. degree required for admission)

Overholser

BIOLOGICAL SCIENCES

Biology

Cytology

Bowman

Botany(1) Mycology; (2) Plant Pathology
TaxonomyStevens
Smith*Zoology*Parasitology: Parasitic Protozoa
Vertebrate: Embryology and Morphogenesis
Vertebrate: IchthyologyWright
Hansen
Schultz

POST-DOCTORAL STUDY

The Council expects its graduates to continue their interest in advanced study and research, and to contribute to its program. All graduates are listed as Associate Fellows and, upon request, will receive notices of all general meetings. They may continue any studies in the University without payment of tuition, and enjoy all University library privileges. Such graduates are required to pay only the usual residence fee in order to establish their active membership in the University. The use of laboratory space and equipment is contingent upon availability, and the cost of all laboratory or special library material is paid by the graduate. Special arrangements for such privileges must be made with the Dean of the Council. Post-doctoral work taken under this privilege may not be applied toward any degree offered by the University.

REGULATIONS

Candidates and Fellows in the Graduate Council are subject to, and are expected to familiarize themselves with, the regulations regarding REGISTRATION, FEES AND FINANCES stated on pages 13-29, and the University regulations stated on pages 50-58.

RESIDENCE AND CONTINUOUS REGISTRATION

The Graduate Council expects all students to work on their doctoral programs in residence, although there is no formal regulation concerning the minimum amount of time of resident study either in preparation for the Council Fellowship Examination or as a Fellow of the Council

engaged in doctoral research. The student who undertakes either part of the doctoral program on full or limited schedule must, in accordance with University regulations, maintain continuous registration under the Graduate Council even when the Council has granted a leave of absence for study or residence elsewhere. Failure to maintain registration in each semester of the academic year disrupts the residence status of the student (see page 55). In such case, the student must reapply for admission to the Council, under whatever new conditions and regulations are set up by his consultative committee or the member of the Council who directs his research.

TEACHING FELLOWSHIPS AND GRADUATE ASSISTANTSHIPS

A limited number of teaching fellowships are assigned annually to certain departments of instruction open to doctoral students registered under the Graduate Council. In many departments of instruction graduate assistants are appointed to assist in the academic program. Applicants for teaching fellowships and graduate assistantships should inquire directly of the executive officer of the department concerned regarding vacancies, details of appointment, and the kind of personal data to be supplied for consideration.

UNITED STATES GOVERNMENT FELLOWSHIPS

The George Washington University is participating in the following Government Fellowships Programs: National Science Foundation Cooperative Graduate Fellowships and Summer Fellowships for Graduate Teaching Assistants, and the Fellowships created under the National Defense Education Act. Qualified students should write directly to the Dean of the Graduate Council for information and applications for these Fellowships.

A pamphlet describing details of the Graduate Council program, together with a current list of fields of research offered by the Council, will be sent upon request to the Office of the Graduate Council.

THE SCHOOL OF MEDICINE*

THE FACULTY†

John Parks, M.S., M.D., *Dean of the School of Medicine*
Angus MacIvor Griffin, Ph.D., *Associate Dean of the School of Medicine*
Alvin Edward Parrish, M.D., *Associate Dean of the School of Medicine*

Harry Ford Anderson, M.D., *Professor of Dermatology and Syphilology*
John Parks, M.S., M.D., *Professor of Obstetrics and Gynecology*
Brian Blades, A.B., M.D., *Professor of Surgery*
Paul Kenneth Smith, Ph.D., *Professor of Pharmacology*
James Winston Watts, B.S., M.D., *Professor of Neurological Surgery*
Chester Elwood Leese, Ph.D., *Fry Professor of Physiology*
Thomas McPherson Brown, A.B., M.D., *Eugene Meyer Professor of Medicine*
Angus MacIvor Griffin, Ph.D., *Professor of Bacteriology*
Ronald Atmore Cox, A.B., M.D., *Professor of Ophthalmology*
Thomas Martin Peery, A.B., M.D., *Professor of Pathology*
William Woodrow Stanbro, M.D., *Professor of Radiology*
Charles Samuel Wise, B.S., M.D., *Professor of Physical Medicine and Rehabilitation*
Carleton Raymond Treadwell, Ph.D., *Professor of Biochemistry*
Charles Seymour Coakley, M.D., *Professor of Anesthesiology*
‡Ira Rockwood Telford, Ph.D., *Professor of Anatomy*
Paul Calabrisi, Ph.D., *Professor of Anatomy*
Harold Stevens, Ph.D., M.D., *Professor of Neurology*
Charles Adrian Michael Hogben, M.D., Ph.D., *Professor of Physiology*
Robert Henry Barter, B.S., M.D., *Professor of Obstetrics and Gynecology*
Harold George Mandel, Ph.D., *Professor of Pharmacology*
Herbert Leonard Ley, Jr., M.D., M.P.H., *Professor of Bacteriology*
Leon Yochelson, A.B., M.D., *Professor of Psychiatry*
Ernest Alfred Watson Sheppard, M.D., C.M., *Clinical Professor of Ophthalmology*
William Staton Anderson, A.B., M.D., *Clinical Professor of Pediatrics*
Henry Lauran Darner, A.B., M.D., *Clinical Professor of Obstetrics and Gynecology*
Charles Robert Lee Halley, A.B., M.D., *Clinical Professor of Medicine*

* Faculty and committee members listed here are for the academic year 1958-59.

† The President of the University, the Dean of Faculties of the University, and the Registrar of the University are members of the Faculty.

‡ On sabbatical leave spring semester 1959-60.

William Stanley McCune, A.B., M.D., *Clinical Professor of Surgery*
 Frank Nelson Miller, Jr., B.S., M.D., *Associate Professor of Pathology*
 Joseph Michael LoPresti, B.S., M.D., *Associate Professor of Pediatrics*
 Alvin Edward Parrish, M.D., *Associate Professor of Medicine*
 Leon Richard Culbertson, B.S., M.D., *Associate Clinical Professor of Urology*
 James Jerry McFarland, Jr., B.S., M.D., *Associate Clinical Professor of Otolaryngology*
 Jack Louis Levine, M.D., *Assistant Clinical Professor of Otolaryngology*
 Victor Frederick Ludewig, A.B., B.S., *Administrator of the University Hospital*

COMMITTEES*

THE DEAN'S COUNCIL

Joseph Hiram Roe
 Brian Blades
 Angus MacIvor Griffin

Winfred Overholser
 Paul Kenneth Smith
 Alvin Edward Parrish

COMMITTEE ON ADMISSIONS

Paul Calabrisi, *Chairman*

Frank Nelson Miller, Jr.
 Joseph Eugene Rankin

James Glover Sites
 Paul Charles Adkins

COMMITTEE ON CURRICULUM

Thomas Martin Peery, *Chairman*

Carleton Raymond Treadwell
 Monroe James Romansky
 Joseph Michael LoPresti

Ira Rockwood Telford
 Charles Adrian Michael Hogben
 James Richard Thistlethwaite

COMMITTEE ON SCHOLARSHIP

Joseph Hiram Roe, *Chairman*

Brian Blades

Thomas Martin Peery

Thomas McPherson Brown
 Ira Rockwood Telford

COMMITTEE ON RESEARCH

Angus MacIvor Griffin, *Chairman*

Paul Kenneth Smith
 Harold Stevens
 John McCallum Evans

Carleton Raymond Treadwell
 Charles Adrian Michael Hogben
 Howard Clemeth Pierpont

* The Dean of the School of Medicine is a member ex officio of all committees.

COMMITTEE ON LIBRARY

Chester Elwood Leese, *Chairman*Harold George Mandel
Seymour AlpertMary Louise Robbins
Stewart William Bush

COMMITTEE ON GRADUATE AND POSTGRADUATE EDUCATION

Thomas McPherson Brown, *Chairman*Brian Blades
Robert Henry Barter
Alvin Edward ParrishThomas Martin Peery
Leon Yochelson
Victor Frederick Ludewig

COMMITTEE ON APPOINTMENTS AND PROMOTIONS

Brian Blades, *Chairman*Paul Kenneth Smith
Thomas Martin PeeryAngus MacIvor Griffin
Alvin Edward Parrish

ADVISORY COMMITTEE ON CANCER RESEARCH

Paul Kenneth Smith, *Chairman*Joseph Hiram Roe
Mary Louise Robbins
William NewmanLouis Katz Alpert
Charlotte Patricia Donlan
Calvin Trexler Klopp

Jeremiah Keith Cromer

ADVISORY COMMITTEE ON REHABILITATION

Charles Samuel Wise, *Chairman*Thomas McPherson Brown
John Pletch AdamsJohn McCallum Evans
James Richard Thistlethwaite

Irene Gorski Tamagna

GENERAL INFORMATION

INTRODUCTION

The School of Medicine of The George Washington University was opened in March 1825. Of the medical schools now in existence in the United States, it is the eleventh in chronological order of founding. The University Hospital and Dispensary were established in 1898 as a part of the organization of the School. The new George Washington University Hospital was opened in 1948, and the Cancer Clinic building was completed in 1954. Additional clinical facilities are used at the District of Columbia General Hospital, Children's Hospital, St. Elizabeths Hospital, and Mt. Alto Veterans Administration Hospital. The School of

Medicine maintains close affiliation not only with the various divisions of the University, but also with the numerous medical research and scientific establishments of the Federal Government in the Nation's Capital. Washington provides world renowned library facilities, comprehensive museums, and excellent recreational facilities which are available to students.

OBJECTIVES

The purpose of the School of Medicine is to prepare men and women in the art and science of medicine to meet the health needs of a growing, ever changing society. It is the responsibility of the School of Medicine to provide its students with a systematic plan of instruction in the basic medical sciences, with well guided clinical experience, with opportunities for expression in research, and with a philosophy in keeping with the highest ethics of the profession.

For undergraduates the aims of the School of Medicine are (1) to select students of superior ability and character; (2) to teach the theoretical principles, laboratory techniques, and clinical applications of the medical sciences; and (3) to provide a diversity of clinical experience through well supervised clerkships in University, public, and federal hospitals providing facilities for all specialized fields of medicine.

The aims of the School of Medicine in graduate and post graduate education are (1) to provide well planned services for internship and resident training in both general and specialized practices; (2) to direct an expanding program of applied research, integrated with teaching at the School of Medicine, and in keeping with the growth of Washington as one of the world's great centers of medical investigation; and (3) to provide postgraduate instruction in recent advances in medicine.

To achieve these objectives the School of Medicine has developed a progressive plan of instruction and a balanced, comprehensive curriculum. To carry out the program the University seeks to maintain a faculty of adequate size and outstanding ability, making use of facilities which provide exceptional opportunities for research and clinical training.

PLAN OF INSTRUCTION

The curriculum is a progressive one, beginning with basic medical science and expanding to include the more complex aspects of the prevention of disease and care of the sick. The teaching program is organized under the various departments of the School of Medicine. (See "Courses of Instruction".)

The schedule for the first year begins with an orientation week designed to introduce the new students to the Faculty, to the upperclassmen, and to the environment for their medical education. The students meet for informal panel discussions with upperclassmen and members of

the Faculty on such subjects as curriculum, medical terminology, use of library facilities, ethics and aims of the medical profession, and student health.

First year instruction is given in anatomy, biochemistry, and physiology using the classroom and laboratory facilities of the School of Medicine. Early in their medical careers students are encouraged to participate in research. Practical problems in patient care are introduced at conferences in the University Hospital.

Having completed the preliminary study of structure and function of the normal body, the student progresses in the second year to a consideration of disease processes and mechanisms. The various microbial agents capable of causing disease are studied in the course in microbiology, and the effect of these and other harmful substances upon the body are studied in the course in pathology. The modes of action of various therapeutic agents are studied in the course in pharmacology. Introductory lectures and demonstrations in the clinical sciences are given during the second semester in order to prepare the student for the responsibilities of the following year.

In the third year the student is assigned to the District of Columbia General Hospital for lectures, conferences, and clinical studies. He serves in the various divisions of the hospital assisting in the preparation of clinical records and performing certain clinical laboratory examinations. He learns to carry out the usual ward procedures and to use certain diagnostic and therapeutic instruments. During this period instruction is individual or in small groups. The instructor reviews the student's observations at the bedside and guides him in the development and application of his knowledge.

During the summer period following the third year each student is required to spend eight weeks in one of the clinical facilities of the School of Medicine.

In the fourth year the student's responsibility for in-patient care continues and enlarges, but at least an equal part of his time is spent in the study and care of clinic patients. The University Hospital, the District of Columbia General Hospital, Children's Hospital, Mount Alto Veterans Administration Hospital, and St. Elizabeths Hospital provide the student with experience in many fields. In this final year of formal medical education stress is placed upon the total patient and his environment so that emotional and economic as well as physical factors may be considered in the restoration of the individual to a state of health and happiness.

Upon satisfactory completion of the four-year course of the School of Medicine, the student is well prepared for graduate training leading to a career in research, medical education, general or specialty practice, or government service.

THE CURRICULUM

Subject	Lecture	Laboratory or Clerkship	Conference	Total
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FIRST YEAR

Gross Anatomy	112	232	—	344
Embryology and Histology	64	128	—	192
Neuroanatomy	32	56	—	88
Biochemistry	76	180	32	288
Physiology	112	152	32	296
Biostatistics	16	—	—	16
Disaster Medicine	16	—	—	16
Introductory Medical Psychology	16	—	—	16
Psychopathology	16	—	—	16
Total	460	748	64	1,272

SECOND YEAR

Bacteriology	64	144	16	224
Pathology	64	136	32	232
Pharmacology	40	80	24	144
Physical Diagnosis	16	96	—	112
Psychiatry	32	48	—	80
Clinical Microscopy	16	32	—	48
Medicine	48	—	—	48
Surgery	32	—	—	32
Hygiene	32	—	—	32
Pediatrics	32	—	—	32
Neurology	32	—	—	32
Obstetrics	16	—	—	16
Radiology	16	—	—	16
Forensic Pathology and Medical Juris- prudence	16	—	—	16
Dermatology	16	—	—	16
Total	472	536	72	1,080

The Colleges, Schools, and Divisions

Subject	Lecture, Conference, or Clinic	Laboratory or Clerkship	Total
THIRD YEAR			
Anesthesiology	16	—	16
Clinical Pathological Conference	16	—	16
Medicine	64	240	304
Medical Laboratory	—	60	60
Neurology	16	60	76
Obstetrics and Gynecology	96	120	216
Ophthalmology	16	—	16
Pediatrics	32	120	152
Physical Medicine	16	—	16
Psychiatry	16	—	16
Radiology	16	—	16
Surgery	112	240	352
Otolaryngology	16	—	16
Admitting and Emergency	—	120	120
Therapeutic Conference	32	—	32
Urology	16	—	16
Total	480	960	1,440

SUMMER CLERKSHIP

Medicine, Surgery, Obstetrics and Gynecology or Pediatrics—eight weeks between third and fourth years.

FOURTH YEAR

Cancer Clinics	—	120	120
Clinical Pathologic Conference	28	—	28
Forensic Medicine	12	—	12
Medicine	—	360	360
Obstetrics and Gynecology	—	240	240
Pediatrics	28	240	268
Psychiatry	—	120	120
Public Health Practice	5	—	5
Surgery	—	360	360
Surgical Anatomy	15	—	15
Surgical Pathology	12	—	12
Total	100	1,440	1,540

EQUIPMENT AND FACILITIES

Medical School Building.—The building housing the School of Medicine is a five-story structure with lecture rooms, classrooms, students'

rooms, and the following laboratories: anatomy; bacteriology, hygiene, and preventive medicine; biochemistry; pathology; pharmacology; and physiology.

They are fully equipped to enable students to pursue adequately the laboratory courses and to acquire the technical skill necessary in modern clinical and investigative work.

Research and Administration Building.—The Research Building houses special laboratories for graduate and staff research in the departments of Anatomy; Biochemistry; Pharmacology; Physiology; and Bacteriology, Hygiene, and Preventive Medicine. Special facilities are provided for the study of radio-active compounds, for tissue-culture techniques, and for virologic procedures. Selected students are invited to participate in certain aspects of the research program either on a volunteer basis or with the support of special Research Scholarships.

On the first floor, the west wing is occupied by a modern medical library; the east wing houses the administrative offices of the School of Medicine. Photographic laboratories and other facilities for audiovisual aids to education are on the second floor.

Medical Library.—The Medical Library in well-equipped quarters on the first floor of 1339 H Street NW., contains 17,700 carefully selected volumes, including the new medical works and the principal medical journals.

Interlibrary loan service is maintained with other medical and scientific libraries.

The Medical Library is open from 9:00 A.M. to 10:00 P.M. each class day, Monday through Friday, and from 9:00 A.M. to 5:00 P.M. Saturday.

A branch of the Medical Library is maintained in the University Hospital for the use of the resident physicians, interns, and students. It is open Monday through Friday, 1:00 to 5:00 P.M. and 6:00 to 9:00 P.M. and Saturday, 1:00 to 5:00 P.M.

The George Washington University Hospital.—This 420-bed hospital is staffed and directed by the Faculty of the George Washington University School of Medicine. It provides excellent clinical opportunity for the instruction of medical students. Virtually every specialty in the fields of medicine and surgery has assigned space and equipment in both the outpatient department and the bed-patient section of this modern hospital.

GOVERNMENT MUSEUMS

The Armed Forces Institute of Pathology, on the grounds of Walter Reed Army Medical Center, affords unexcelled opportunity for study of conditions met in general medicine and surgery as well as those of special military significance. Its collection of anatomical and pathological specimens comprises material received from all areas of the world and is un-

equaled in this country. The Museum of Hygiene, the National Museum, the Smithsonian Institution, the Botanic Gardens, and the various collections of the Department of Agriculture all afford opportunity for study of materials of special interest in various areas of Medicine and its allied sciences.

CLINICAL FACILITIES

Students at the George Washington University School of Medicine receive clinical training at the University Hospital, at the new University Cancer Clinic, and at four affiliated hospitals. In the first year the medical student begins his work in the hospital as well as in the lecture halls and classrooms.

The George Washington University Hospital.—All clinics are under the supervision of the Dean and the chiefs of services. The individual student has direct responsibility to patients under supervision. Clinical and clinical pathological conferences are held in which the history of patients, the physical findings, laboratory records, and post-mortem pathology, are presented and correlated.

The Outpatient Department.—The Outpatient Department has clinical facilities for each Service in the Hospital. Fourth-year students are assigned in rotation by section for clinical instruction in the Outpatient Department.

The George Washington University Cancer Clinic.—The Helen L. and Mary E. Warwick Memorial building, opened in 1954, houses the Cancer Detection Clinic and special laboratories for research related to the nature, diagnosis, and treatment of cancer.

The facilities of the Cancer Detection Clinic are used for the teaching of medical students. The diagnosis and treatment of various forms of neoplasms are presented. The results of the treatment of neoplasms are evaluated by follow-up studies.

District of Columbia General Hospital.—Washington's large city hospital has 1,238 beds and an outpatient department in which approximately 138,810 patient-visits are made each year. It provides clinical opportunities in virtually every branch of medicine and surgery.

Children's Hospital.—This is one of the largest and best known hospitals for children in the United States. Medical students receive training and clinical experience in pediatrics on both clinic and inpatient services.

St. Elizabeths Hospital.—This famous hospital celebrated the 100th anniversary of its founding in 1955. This hospital cares for 8,500 patients a year with virtually every known psychiatric and neurologic disorder. The George Washington University medical students begin their studies in psychiatry in their first year and these studies continue through-

out the four years. Much of their clinical instruction in psychiatry and neurology is received at St. Elizabeths. Prominent psychiatrists and neurologists on the St. Elizabeths staff are members of the George Washington University School of Medicine faculty. Additional clinical experience in psychiatry and neurology is gained by students at the George Washington University Hospital Psychiatric Departments and in the Outpatient Department of the University Hospital. Special lectures and clinical work in child psychiatry are given in the Psychiatric Department of Children's Hospital.

Mt. Alto Veterans Administration Hospital.—Clinical experience in both medical and surgical subjects is provided at this Veterans Administration hospital.

ADMISSION, REGISTRATION, FEES AND FINANCIAL REGULATIONS

Students in the School of Medicine are subject to, and are expected to familiarize themselves with, the regulations stated on pages 13-20.

Registration in the School of Medicine is for the full academic year. After the student has entered the courses of instruction he is obligated for the full tuition. Acceptance by the School of a student's fee does not in any way obligate the School to accept the student for any subsequent year, and the right is reserved to require the withdrawal of any student from the School whenever, in the interest of the student or the School, the Faculty deems it advisable to do so.

A fee of \$10 to defray the costs of completing the records for final consideration by the Committee on Admissions must accompany each application. This fee applies to students whose premedical training was completed at this University as well as to students who have not previously attended this University. Fees for each semester are payable in advance.

The Committee on Admissions is guided in the selection of students by the applicant's academic ability, the results of the Medical College Admission Test, and personal qualifications as determined by letters of reference and personal interview. Applicants are interviewed only by invitation of the Committee.

Each applicant is notified as soon as possible after the Committee makes a decision.

An applicant who is offered a place in a class is required to notify the Director of Admissions within two weeks of his intent to accept the place reserved for him and to remit a deposit of \$100 not later than January 15th prior to the opening of classes of the academic year for which he applied. This deposit will not be refunded after January 15th. It will be credited toward the tuition for the first semester.

Accompanying the offer of a place in class will be forms for a report

on your physical condition. This report must be completed by your physician and returned to the Director of Admissions within two weeks of the receipt of your letter of acceptance.

Credit for work will not be given until, at the completion of a laboratory course, the student has replaced or paid for all articles of equipment or other University property which he has lost, broken, or destroyed. All breakage or loss not directly traceable to an individual student is assessed pro rata.

COST OF TEXTBOOKS AND STUDENT EQUIPMENT

The minimum cost of necessary textbooks and student equipment (microscope, drawing materials, glass slides, clinical thermometer, stethoscope, hemocytometer, uniforms, etc.) is approximately as follows: first year, \$400; second year, \$250; third year \$125; fourth year, \$80; total \$855.

A fee of \$1 a semester is charged for the use (optional) of a locker.

REGULATIONS

Students in the School of Medicine are subject to, and are expected to familiarize themselves with, the general University regulations stated on pages 50-58.

ATTENDANCE

A student is not permitted to attend classes until registration has been completed and fees due have been paid. Regular attendance is required.

GRADES

The following grading system is used *A* (90-100); *B* (80-89); *C* (75-79); *D* (65-74) condition; *E* (below 65) failure; *Inc.*, incomplete, the passing grade in each subject is *C*.

A student conditioned in any subject will not be advanced until such condition is removed and then only by authority of the Faculty.

EXAMINATIONS

Examinations, which may be written, oral, or practical, will be held during and at the end of each semester.

All students in the School of Medicine are required to take Part I and Part II of the National Board Examinations, except that students from those states and foreign countries which do not recognize the National Board may be exempted from Part II by action of the Committee on Scholarship.

PHYSICAL EXAMINATIONS

All first-year students are given a comprehensive physical examination upon admission to the School of Medicine. The students are informed of the findings and advised regarding such measures as will tend to help them maintain a high standard of health.

In addition medical students benefit from the complete Tuberculosis Case Finding Program which the School has maintained since 1938-39. Under this program all students receive tuberculin tests, X-ray examinations, and such special attention from chest specialists as is necessary to reduce to a minimum the dangers from tuberculosis. Students are immunized against those diseases for which proven prophylaxis exists.

THE DEGREE OF DOCTOR OF MEDICINE

Upon the satisfactory completion of the requirements of the School of Medicine the degree of Doctor of Medicine is conferred.

COMBINED ARTS AND MEDICINE CURRICULUM

In order to be recommended for the degree of Bachelor of Arts, the candidate must complete at least 90 semester hours of prescribed college work (at least 30 hours and one year of residence must be completed in Columbian College, the senior liberal arts college), and the first year of the medical curriculum. Upon satisfactory completion of the fourth year of the medical curriculum the student becomes eligible for the degree of Doctor of Medicine.

REQUIREMENTS FOR THE DEGREE

Every candidate for graduation with the degree of Doctor of Medicine must be at least twenty-one years of age, and free of all indebtedness to the University. He must have completed satisfactorily not less than four academic years of study as a matriculated student in Medicine, completed all required courses, and passed satisfactorily all prescribed examinations.

HONORS

A candidate who has completed the four-year medical course with an average grade of 90 or above, may be recommended for graduation "with distinction."

INTERN AND RESIDENT TRAINING PROGRAM

The George Washington University Hospital offers rotating-type internships as classified by the National Intern Matching Program, Inc.

Twenty-seven internships of one year each are offered; fourteen in the Department of Medicine with emphasis on medicine, eleven in the Department of Surgery with emphasis on surgery, and two in the Department of Pathology with emphasis on pathology.

Rotating Internships, Emphasis on Medicine.—Interns will be assigned to six months of general medicine, two months on the surgical service, and one month each on neuro-psychiatry, pediatrics, obstetrics and gynecology, and emergency.

Rotating Internships, Emphasis on Surgery.—Interns will be assigned to the surgical services for nine months, to general medicine for two months, and to obstetrics for one month.

Rotating Internships, Emphasis on Pathology.—Interns will be assigned to the pathology service for six months, to general medicine for two months, to surgery for two months, to pediatrics for one month, and to obstetrics for one month.

Fifty-five approved residencies are offered in anesthesiology, cardiac diseases, internal medicine, neurologic surgery, neurology, obstetrics-gynecology, pathology, pediatrics, physical medicine, plastic surgery, psychiatry, roentgenology, surgery and thoracic surgery. Residency programs are of from one to four years depending upon the service. Appointments are for one year subject to renewal. In several of the fields there are affiliations with local and government hospitals.

Fellowships of one or two years are available to acceptable candidates in anesthesiology, cardiology, chest diseases, infectious diseases, outpatient service, physical medicine, rheumatic diseases, surgery and thoracic surgery.

For application blanks and further information, address the Medical Director, The George Washington University Hospital, 901 Twenty-third Street NW., Washington 7, D. C.

MEDICAL TECHNOLOGY COURSE

This course is open to candidates for the degree of Bachelor of Science in Medical Technology, offered by Columbian College (see pages 90-91) and to other applicants meeting the requirements of the Registry of Medical Technologists of the American Society of Clinical Pathologists. These requirements, fully satisfied by the Columbian College program, are as follows: two years (60 semester hours or 90 quarter hours) of college work in any college or university accredited by a recognized standardizing association, including courses in the biological sciences and in chemistry. The requirement in the biological sciences is satisfied by college courses totaling 12 semester hours (18 quarter hours) in general biology, bacteriology, parasitology, anatomy, histology, embryology, phys-

iology, or zoology; bacteriology is especially recommended. The requirement in chemistry is met by a full year's college course in inorganic chemistry (at least 6 semester hours or 9 quarter hours) plus 3 semester hours in either quantitative analysis, organic chemistry, or biochemistry; quantitative analysis is especially recommended.

In the case of students enrolled in Columbian College for the degree of Bachelor of Science in Medical Technology, the course here described is to be considered as the final (fourth) year of qualification for the degree. In the case of those who have taken their prerequisite work in some other college or university, satisfactory completion of the Medical Technology Course will not satisfy the requirements for the degree from Columbian College.

The Medical Technology Course consists of 12 months of didactic and practical work in clinical laboratory procedures, offered by the Department of Pathology in the University Hospital. Students ordinarily begin this course with the fall semester, but under exceptional circumstances may begin at other times.

A limited number of scholarships are provided by the University Hospital for students enrolled in the fourth year of the degree program. (See announcement on pages 38-39.) All students in this fourth year must provide themselves with uniforms; laundry of uniforms is provided by the University Hospital. A cash allowance of \$65 a month is granted during the last 6 months of the fourth year of training.

Upon satisfactory completion of the course a certificate is awarded and the candidate is eligible for the national certifying examination given by the Registry of Medical Technologists.

Enrollment in the Medical Technology Course is strictly limited so that personal instruction can be given. Acceptance to the Columbian College degree program does not necessarily assure acceptance into the Hospital program. Inquiry about this course should be sent directly to the Department of Pathology, The George Washington University Hospital, Washington 7, D. C.

THE LAW SCHOOL

THE FACULTY AND STAFF OF INSTRUCTION*

Louis Harkey Mayo, B.S., LL.B., J.S.D., *Acting Dean of the Law School*
 Carville Dickinson Benson, A.B., LL.B., S.J.D., *Assistant Dean of the Law School*
 David Benson Weaver, A.B., LL.B., *Director of Continuing Legal Education*

William Thomas Fryer, A.B., LL.B., J.D., *Professor of Law*
 Carville Dickinson Benson, A.B., LL.B., S.J.D., *Professor of Law*
 James Forrester Davison, A.B., LL.B., LL.M., S.J.D., *Professor of Law*
 Oswald Symister Colclough, B.S., LL.B., LL.D., *Professor of Law*
 †Herman Israel Orentlicher, A.B., LL.B., *Professor of Law*
 Leroy Benson Merrifield, A.B., LL.B., M.P.A., S.J.D., *Professor of Law*

Orville Hassler Walburn, A.B., LL.B., J.D., *Professor of Law*
 David Benson Weaver, A.B., LL.B., *Professor of Law*
 Louis Harkey Mayo, B.S., LL.B., J.S.D., *Professor of Law*
 ‡Glen Earl Weston, B.S., LL.B., *Professor of Law*
 Robert McKinney Cooper, Ph.M., J.D., *Professor of Law*
 William Thomas Mallison, Jr., A.B., LL.B., *Professor of Law*
 John Wingfield Jackson, B.S., LL.B., *Adjunct Professor of Law*
 Frank Hammett Myers, LL.B., LL.M., *Adjunct Professor of Law*
 John Albert McIntire, A.B., LL.B., LL.D., *Professorial Lecturer in Law*
 Justin Lincoln Edgerton, A.B., LL.B., *Professorial Lecturer in Law*
 Philip Field Herrick, A.B., LL.B., LL.M., *Professorial Lecturer in Law*
 George Edward Monk, A.B., LL.B., LL.M., *Professorial Lecturer in Law*
 Charles James Zinn, A.B., LL.B., LL.M., S.J.D., *Professorial Lecturer in Law*

Joseph Dach, LL.D., LL.B., *Professorial Lecturer in Law*
 Louis James Harris, A.B., LL.B., S.J.D., LL.M., *Professorial Lecturer in Law*
 John Joseph Czyzak, A.M., LL.B., *Professorial Lecturer in Law*
 Leonard Patrick Walsh, A.B., LL.B., *Professorial Lecturer in Law*
 Edward Abbot Beard, LL.B., *Professorial Lecturer in Law*
 Robert Galloway Dixon, Jr., Ph.D., LL.B., *Associate Professor of Law*
 Jackson Reid Hambrick, A.B., LL.B., *Associate Professor of Law*

* The President of the University, the Dean of Faculties, the Dean and Assistant Dean of the School, the Registrar of the University, the Director of Admissions of the University, the Professors, Adjunct Professors, Associate Professors, and Assistant Professors constitute the Faculty.
 † On sabbatical leave fall semester 1959-60.
 ‡ On sabbatical leave spring semester 1959-60.

- Paul Archibald Rose, LL.B., *Associate Professorial Lecturer in Law*
 George Nelson Robillard, B.S., LL.B., *Associate Professorial Lecturer in Law*
 Herbert Joseph Liebesny, J.D., *Associate Professorial Lecturer in Law*
 Carl Clell Davis, B.S., LL.B., LL.M., *Associate Professorial Lecturer in Law*
 Thomas Hayward Brown, *Associate Professorial Lecturer in Law*
 Pasquale Joseph Federico, A.M., LL.B., *Associate Professorial Lecturer in Law*
 Gust Angelo Ledakis, B.B.A., LL.B., S.J.D., *Assistant Professor of Law*
 Monroe Henry Freedman, A.B., LL.B., LL.M., *Assistant Professor of Law*
 Robert James Harris, A.B., LL.B., *Assistant Professor of Law*
 Crombie James Dickinson Garrett, A.B., LL.B., *Lecturer in Law*
 William Woolcott Goodrich, LL.B., *Lecturer in Law*
 Vincent Kleinfeld, LL.B., *Lecturer in Law*
 George Joseph Goldsborough, B.S., J.D., *Lecturer in Law*
 Nicholas Eugene Allen, B.S., LL.B., *Lecturer in Law*
 Manuel Frederick Cohen, B.S., LL.B., *Lecturer in Law*
 Sheldon Stanley Cohen, A.B., J.D., *Lecturer in Law*
 William Edward Guilian, LL.B., *Lecturer in Law*
 Ralph Clarke Nash, Jr., A.B., J.D., *Lecturer in Law*
 Franklin Morton Schultz, A.B., LL.B., *Lecturer in Law*
 Burton Stevenson, LL.B., B.S., *Lecturer in Law*
 Henry Newton Williams, Ph.D., LL.B., LL.M., *Lecturer in Law*
 John Alexander Kendrick, A.B., LL.B., *Clerk of the Trial Practice Court*
 Dudley Graham Skinker, LL.B., *Associate Clerk of the Trial Practice Court*

COMMITTEES •

THE DEAN'S COUNCIL

- | | |
|---------------------------|---------------------------|
| William Thomas Fryer | Carville Dickinson Benson |
| James Forrester Davison | Herman Israel Orentlicher |
| Leroy Sorenson Merrifield | Robert McKinney Cooper |

COMMITTEE ON ADMISSIONS

- | |
|--|
| Carville Dickinson Benson, <i>Chairman</i> |
| Monroe Henry Freedman |
| Edward Andrew Potts, <i>ex officio</i> |

COMMITTEE ON GRADUATE STUDIES

- | |
|--|
| James Forrester Davison, <i>Chairman</i> |
| Leroy Sorenson Merrifield |
| David Benson Weaver |
| Robert McKinney Cooper |
| William Thomas Mallison, Jr. |
| Gust Angelo Ledakis |

• The Dean of Faculties and the Dean and Assistant Dean of the Law School are members *ex officio* of all committees

COMMITTEE ON SCHOLARSHIP

Orville Hassler Walburn, *Chairman*
 Carville Dickinson Benson Robert McKinney Cooper

COMMITTEE ON CURRICULUM

Herman Israel Orentlicher, *Chairman*
 William Thomas Fryer Glen Earl Weston
 Robert Galloway Dixon, Jr. Robert James Harris

LIBRARY COMMITTEE

Jackson Reid Hambrick, *Chairman*
 Leroy Sorenson Merrifield Robert James Harris

GENERAL INFORMATION

LOCATION IN THE NATION'S CAPITAL

The George Washington University Law School, now in its 94th year, is the oldest law school in the District of Columbia. The School took part as a charter member in 1900 in the organization of the Association of American Law Schools and it has been an active member of the Association since that time. It is approved by the Section of Legal Education and Admissions to the Bar of the American Bar Association.

National University, which has had an important place in legal education in the District of Columbia since 1869, was merged into The George Washington University in August 1954.

Of special significance is the location of the Law School in the Nation's Capital, the focal point of the law in action, both American and international. The work of the School goes on in this environment, presenting a unique opportunity for observation and study of federal agencies—judicial, legislative, and administrative.

The years of residence at law school are years of participation in the life of the community, which in the case of the George Washington University Law School, is the government of the United States by law. As a consequence, the study of law takes on added meaning, whether the goal be government service or practice, general or specialized.

OBJECTIVES

The primary purpose of the Law School is to prepare men and women to meet the needs of society in the many fields of law, public and private. These needs call not only for technical skill but also for responsible leadership.

ership in the development of the law and the administration of justice. In fulfilling these responsibilities the Law School offers: (1) a program of study in preparation for the practice of law; (2) programs of study and research on the graduate level for foreign as well as for American students; (3) a continuing legal education program for members of the bar; (4) institutes and forums on current topics in domestic and foreign law; (5) the publication of a law journal containing the results of research in public law; and (6) the encouragement of student professional co-curricular activities.

PROGRAMS OF STUDY

Traditionally the Law School has been national in the geographic distribution of its students. At the present time, men and women holding baccalaureate degrees from more than three hundred colleges and universities come from the forty-nine states, the territories, and several foreign countries to comprise the student body. As a consequence the programs of study leading to the degrees of Bachelor of Laws and Juris Doctor have been planned to provide instruction and training for the practice of law wherever the Anglo-American legal system obtains.

Graduate work leading to the degrees of Master of Laws and Doctor of Juridical Science is offered for those desiring further study and research in specialized fields of law.

Provision is made for advanced study by members of the bar who do not desire to register as candidates for degrees. Lawyers may take courses for this purpose either as unclassified graduate students or as continuing legal education students.

Graduate work is offered also to meet the needs of lawyers who come from countries whose legal systems are not based on the English law. There are two programs of study, one leading to the degree of Master of Comparative Law for lawyers planning to return to their own countries, and the other leading to the degree of Master of Comparative Law (American Practice) for lawyers planning to remain in this country for the practice of law.

ORGANIZATION OF THE CURRICULUM

The curriculum is organized so that students may enter the Law School at the beginning of the fall or spring semester of the academic year, or at the beginning of the summer term.

MORNING AND EVENING DIVISIONS

Morning classes, other than Trial Practice Court, meet for fifty-minute periods between 9:10 A.M. and 1:00 P.M., Monday through

Friday; Trial Practice Court meets for a two-hour period from 9:30 to 11:30 A.M. on Saturday.

Evening classes meet for two fifty-minute periods from 5:50 to 7:40 P.M., Monday through Friday. A four-credit course, e.g., Torts, meets two evenings a week; a two-credit course, e.g., Personal Property, meets one evening a week. The evening division conforms to the standards of the morning division and has the same teaching staff.

THE LIBRARY

The Law Library of 54,000 volumes contains the official reports of the decisions of the courts of last resort of all states prior to the National Reporter System, and of some states complete to date; the National Reporter System, complete; the reports of the United States Supreme Court and lower federal courts, and the reports of federal administrative agencies; Shepard's Citations for the units of the Reporter System; the English Reports, Full Reprint; the English Law Reports; the Times Law Reports; the Dominion Law Reports; the United States statutes and codes; complete sets of statutes of all the states; the English statutes; the principal English and American digests and encyclopedias; collections of special reports and annotated cases; United Nations documents; leading textbooks and treatises; and practically complete sets of about 150 legal periodicals. A section of the library, consisting of books acquired from National University, is known as the National University Law Collection.

The international law collection, formerly the library of the Carnegie Endowment for International Peace, is available to law students.

The Library, which is on the fourth floor of Stockton Hall, is open from 9:00 A.M. to 10:00 P.M., Monday through Friday; from 9:00 A.M. to 5:00 P.M. on Saturday; and from 2:00 to 6:00 P.M. on Sunday. Books and other materials do not circulate and must be used in the library.

THE LAW REVIEW

The George Washington Law Review, published by the University, is edited and managed by students of the Law School under the supervision of faculty advisers. It is devoted exclusively to state and federal public law. The location of the University in the National Capital, where the primary sources of federal public law may be observed in operation, affords an unexcelled opportunity for specialization in this field.

The *Review* organization includes a faculty editor-in-chief, an associate faculty editor, a faculty board of advisory editors, a board of departmental advisory editors, and a board of student editors. The student editors are chosen each year on the basis of scholarship.

THE STUDENT BAR ASSOCIATION

Every student in the Law School is a member of the Student Bar Association, which is organized to enable students to become better acquainted with problems of the profession, to foster professional ideals, and to bring about closer contact with members of the profession engaged in active practice of the law.

The work of the Student Bar Association is carried on by various committees and by group and general meetings of a professional and social nature. From time to time lectures are given by outstanding authorities on legal and professional problems.

An important activity is the Van Vleck Case Club Competition, which provides an opportunity for training in appellate advocacy. First and second year students participate as contestants before courts composed of members of the Faculty and the local bar. Senior law students of the Case Club also sit as judges. The final argument is held before a court composed of distinguished federal judges.

ORDER OF THE COIF

The Order of the Coif, a national honor society with chapters in over forty law schools, aims "to foster a spirit of careful study and to mark in a fitting manner those who have attained a high grade of scholarship." The George Washington University Chapter was established in 1926. Members are elected each year from the highest-ranking 10 per cent of the graduating class of the Law School.

REGULATIONS

Students in the Law School are subject to, and are expected to familiarize themselves with, the following regulations and the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES *stated on pages 13-29, and the University regulations stated on pages 50-58.*

AMOUNT OF WORK

Students without substantial outside employment may take a program of studies of fourteen hours a week. Such students may take courses in the evening only if they are not available in the morning and if a majority of the hours taken are in morning courses. Students, whether in the morning or evening division, with substantial outside employment must take a limited program of studies not exceeding ten hours a week. Students taking a majority of their classes in the evening may not take more than ten hours a week. A minimum schedule of ten hours in the morning division and six hours in the evening division is required except in exceptional circumstances when a reduced program is authorized by the Dean for continuing students.

ATTENDANCE

Regular attendance at classes is required and is necessary for successful work. A student who is deficient in class attendance in any course may be barred from taking the examination.

RESIDENCE REQUIREMENTS

Candidates for the degree of Bachelor of Laws must complete a residence period of three academic years. Attendance in the morning division for the fall and spring semesters constitutes residence for an academic year; similar attendance in the evening division constitutes residence for three-fourths of an academic year. Consequently, a morning student must attend six semesters to meet residence requirements; an evening student must attend eight. Students authorized to take schedules of less than ten hours in the morning division or less than six hours in the evening division receive residence credit on a proportional basis. Students who attend the summer sessions receive fractional residence credit.

Students planning to attend summer school sessions at other law schools and desiring to use credits obtained at such schools in their course at this Law School must first have the courses they wish to take approved by the Dean. In no event will credits be recognized in excess of those which might be obtained in a similar period in this School.

EXAMINATIONS

Written examinations are held at the end of each course. Every student is required to take the regular examinations unless excused. No excuse for absence will be granted except by the Dean and then only for illness or other emergency. Application for excuse must be made in writing not later than one month after the date of the examination. An entry of *NG* (no grade) will be made on the record of a student thus excused. To receive credit for the course, he must take the next regularly scheduled examination.

No special examination will be granted except to a student entitled to take a postponed examination, who is a candidate for a degree to be conferred at a convocation which precedes the next regular examination in the subject. Written application, showing sufficient cause, should be addressed to the Dean, and approval will be granted at the discretion of the Faculty.

If a student fails to take an examination, a grade of *F* (to be counted as zero) will be recorded unless he has been excused from the examination as provided above or has obtained the Dean's permission to drop the course.

GRADES

Grades are indicated by the letters *A*, excellent, 85-100; *B*, good, 75-84; *C*, satisfactory, 65-74; *D*, poor, 55-64—below standard for graduation; *F*, failed—below 55; and *NG*, no grade—student excused from failure to take regularly scheduled examination. See "Examinations" above, for grade upon failure to take an examination. The grades *A*, *B*, *C*, and *D* mean that the work has been completed and credit given for the courses. *F*, failed, means that no credit will be given. To obtain credit the student must repeat the course, except that a student who has obtained an average of *C* in the work of the semester just completed and the preceding semester and received a grade of *F* in only one course during those semesters may, in exceptional cases with the consent of the Faculty, take the next regular examination in that course. If the failure occurs in the first semester, the succeeding semester is used as the second semester. The privilege is limited to taking the next regular examination, except that a candidate for a degree at a convocation before the next regular examination may be permitted to take a special examination at the end of the next semester. If on the reexamination the student receives a passing grade he will be given credit in the course. Both grades are recorded.

EXCLUSION AND PROBATION FOR POOR SCHOLARSHIP

Candidates for the Degrees of Bachelor of Laws and Juris Doctor.—

A student who in one semester, or two successive semesters, fails in courses aggregating eight or more semester hours will be excluded, except that if currently registered he will be permitted to complete the work of the semester. Such a student is not eligible thereafter to be registered in the Law School or to attend classes. While excluded he may, however, with the consent of the Faculty, be admitted to the next regular examinations in those courses in which he has made a grade below passing, and if he receives a grade of passing in those courses with an average sufficient to make his cumulative average not less than *C*, he will be reinstated.

A student not subject to exclusion under the foregoing rule who at any time fails to maintain a cumulative average of at least *C* will be placed on probation. A student on probation may at the discretion of the Dean be required to reduce his program of study. If a student on probation does not, by the end of the second semester following that in which his average has fallen below *C*, receive grades sufficient to give him a cumulative average of at least *C*, he will be excluded.

The cumulative average of a student includes all the grades in all the courses taken while he is in the Law School as a candidate for a particular degree. When a course is repeated or a reexamination is taken,

both the first grade and the subsequent grade or grades are counted in the cumulative average.

In special cases in which a student who has been excluded can clearly demonstrate that his low grades were due to special circumstances beyond his control and that he has the capacity to pursue the study of law with a definite likelihood of success, such student may be readmitted by the Faculty subject to such conditions as the Faculty may impose.

Candidates for Graduate Degrees.—A candidate for one of the graduate degrees whose work is not satisfactory in the opinion of the Faculty, taking into consideration the requirements and standards for the degree, may, by action of the Faculty, be excluded at the end of the semester for which he is currently registered.

Unclassified Students.—An unclassified student whose work is not satisfactory in the opinion of the Faculty may, by action of the Faculty, be excluded at the end of the semester for which he is currently registered.

CLASSIFICATION OF STUDENTS

Candidates for the degree of Bachelor of Laws are divided into classes on the completion of semester hours as follows: first year, one through twenty-eight; second year, twenty-nine through fifty-six; third year, fifty-seven or more.

THE DEGREES OF BACHELOR OF LAWS AND JURIS DOCTOR

The programs of study leading to the degrees of Bachelor of Laws and Juris Doctor are addressed to the development and application of legal principles, skills, and ideals which are indispensable to the equipment of a lawyer for professional responsibility and leadership in modern society. They include, first and foremost, the traditional core of legal education, namely, the study of legal materials—judicial, statutory, and administrative—and instruction in the technique of their use. These programs include the study of the nature and purpose of law, the history of the Anglo-American legal system, and the history and standards of the legal profession; practice in the skills of legal research and legal writing; elementary training in trial practice; and, through the medium of seminars, experience in group handling of legal problems.

REQUIREMENTS FOR THE DEGREES

BACHELOR OF LAWS

To be recommended for the degree of Bachelor of Laws (LL.B.) the student must have completed a residence period of not less than three

academic years (four years for evening students) and eighty semester hours, with a cumulative average of at least *C*. At least one academic year of residence and twenty-eight semester hours are required of students admitted with advanced standing. Credits allowed by way of advanced standing are not included in computing the average required for graduation.

JURIS DOCTOR

The degree of Juris Doctor (J.D.) is conferred as a recognition of the completion at the George Washington University Law School, with high rank, of the required program of study for the Bachelor's degree, including experience in research and legal authorship. To be recommended for this degree the student must have completed: (1) a residence period of not less than three academic years (four years for evening students); (2) eighty semester hours with a cumulative average of at least *B* including one of the following courses: Comparative Law, Jurisprudence, or one of the graduate seminars; and (3) one year of acceptable service on the board of student editors of *The George Washington Law Review*, election to which is subject to regulations laid down by the Faculty. All requirements for the degree must be completed at this Law School.

HONORS

The degree of Bachelor of Laws or of Juris Doctor "with distinction" will be awarded students who obtain a cumulative average of *A*.

CURRICULUM

Required and Elective Courses.—A program of required and elective courses has been developed in order to assure coverage of the basic courses as well as to allow a degree of flexibility to meet the diverse interests of students. All first-year courses, three second-year courses, and one third-year course are required, leaving a total of thirty-eight hours of electives. In general, second-year students are restricted to second-year electives but in appropriate cases the taking of third-year electives will be approved. Similarly, specially qualified third-year students may secure approval to take graduate courses and research in public law.

Practice and Trial Practice Court.—Classroom instruction is conducted in pleading and procedure, trial and appellate practice, and evidence. This instruction includes grounding in the principles of the Federal Rules of Civil Procedure and the Federal Rules of Criminal Procedure. In addition, each senior student is required to participate

in the work of the Trial Practice Court, which includes the trying of cases as junior counsel and as senior counsel. A special section of the court is devoted exclusively to the trial of patent cases. Experience in preparing and arguing appellate court cases is available through the Case Club Competition.

Patent Law.—Students interested in patent law should take the following group of courses: Unfair Trade Practices, Patent Law I and II, Patent Office Practice, Patent Trial Practice Court, Federal Antitrust Laws, and Trade Regulation Seminar.

Curriculum.—Following is the curriculum for students beginning in the fall semester. Adjustments are made to meet the needs of students beginning in the spring semester and in the summer.

Morning Division

FIRST YEAR

FALL SEMESTER	Semester Hours	SPRING SEMESTER	Semester Hours
Contracts I	4	Agency	2
Legal Method and Legal System ..	4	Constitutional Law	4
Personal Property	2	Contracts II	2
Torts	4	Criminal Law and Procedure	4
		Real Property	2
Total	14	Total	14

SECOND YEAR

FALL SEMESTER	Semester Hours	SPRING SEMESTER	Semester Hours
Civil Procedure	4	Evidence	4
Conveyances	2	Electives	10
Electives	8		
Total	14	Total	14

THIRD YEAR

FALL SEMESTER	Semester Hours	SPRING SEMESTER	Semester Hours
Trial Practice Court	2	Trial Practice Court	2
Electives	10	Electives	10
Total	12	Total	12

Evening Division

FIRST YEAR

FALL SEMESTER	Semester Hours	SPRING SEMESTER	Semester Hours
Contracts I	4	Contracts II	2
Legal Method and Legal System ..	4	Criminal Law and Procedure....	4
Personal Property	2	Torts	4
Total.....	10	Total.....	10

SECOND YEAR

FALL SEMESTER	Semester Hours	SPRING SEMESTER	Semester Hours
Agency	2	Constitutional Law	4
Civil Procedure	4	Conveyances	2
Real Property	2	Electives	4
Elective	2	Total.....	10
Total.....	10		

THIRD YEAR

FALL SEMESTER	Semester Hours	SPRING SEMESTER	Semester Hours
Electives	10	Evidence	4
Total.....	10	Electives	6
		Total.....	10

FOURTH YEAR

FALL SEMESTER	Semester Hours	SPRING SEMESTER	Semester Hours
Trial Practice Court	2	Trial Practice Court	2
Electives	8	Electives	8
Total.....	10	Total.....	10

GRADUATE PROGRAM

DEGREES OF MASTER OF LAWS AND DOCTOR OF JURIDICAL SCIENCE

The administration of justice under law is a matter so vast and complex that some graduates feel the need for further study in order to broaden and deepen their understanding of the law. Others wish to extend their study into rapidly developing specialized fields. Graduate

instruction, leading to the degree of Master of Laws, is therefore offered to enable qualified students to attain one or both of these objectives.

The degree of Doctor of Juridical Science is offered for selected students whose aim is to extend still further their studies by pursuing original research in law.

Graduate work is available to evening as well as morning students in order that lawyers in private practice and in government service may engage in advanced study or in original research.

PROGRAMS OF STUDY FOR FOREIGN LAWYERS

Two programs of study are provided to meet the needs of lawyers who come from countries whose legal systems are not based on the English law. For such lawyers, whose aim is to acquire an understanding of our system so that they may work intelligently with its materials and practitioners after returning to their own countries, there is available the degree of Master of Comparative Law. For foreign lawyers, however, who wish to practice in a common law jurisdiction there is available the degree of Master of Comparative Law (American Practice) with an appropriate program of study. With respect to both programs, the students are not assigned to special classes but work in association with the other students in the regular courses, each student's program being adapted to his individual needs.

NONDEGREE STUDY: CONTINUING LEGAL EDUCATION

An important part of the graduate program is the offering of courses in various fields of the law for members of the bar not interested in degree candidacy but desirous of keeping abreast of current developments. The offerings in the field of governmental regulation provide opportunities for specialization. Although third-year and graduate courses are particularly suitable, first-year and second-year courses may be taken in appropriate cases. Members of the bar taking graduate work in this way register as unclassified students or as continuing legal education students.

RESEARCH IN PUBLIC LAW

Research in public law is conducted under the supervision of members of the Faculty. The purpose of this research is to furnish means for training specialists in public law, either as government lawyers or as lawyers representing individuals or corporations in cases in which the Government is a party, and to assist in the analysis, clarification, formulation, and improvement of public law, substantive and procedural.

Candidates for the graduate degrees in the Law School and specially qualified seniors may pursue this work.

REQUIREMENTS FOR THE DEGREES

MASTER OF LAWS

To be recommended for the degree of Master of Laws (LL.M.) the student must have completed a residence period of not less than two semesters. Such residence should normally be continuous. All requirements for the degree must be completed in this Law School and in a period not exceeding two years after registration for work for the degree. The student must have completed, with a minimum average of *B*, twenty semester hours in courses listed in the law curriculum as graduate courses except that in appropriate cases third-year courses may be approved for inclusion in the program of study if not previously taken.

MASTER OF COMPARATIVE LAW

The degree of Master of Comparative Law (M.Comp.L.) is for foreign students who intend to return to their countries. To be recommended for this degree the student must have completed a residence period of not less than one academic year. He must have completed satisfactorily twenty-four semester hours in approved courses in the curriculum of the Law School or of such other departments of the University as the Faculty of the Law School shall approve.

MASTER OF COMPARATIVE LAW (AMERICAN PRACTICE)

The degree of Master of Comparative Law, American Practice (M.Comp.L.(Am.Prac.)) is for foreign students who intend to remain in this country. To be recommended for this degree the student must have completed a residence period of not less than one academic year. He must have completed twenty-eight semester hours in approved courses in the curriculum of the Law School with a cumulative average of at least *C*.

DOCTOR OF JURIDICAL SCIENCE

To be recommended for the degree of Doctor of Juridical Science (S.J.D.) the student must have completed a residence period of not less than one academic year. He must have pursued a course of study and research designated by his consultative committee and approved by the Committee on Graduate Studies. At the conclusion of his first year of residence, or at such other time as the Committee on Graduate Studies may set, the candidate must pass an oral examination in those fields of study selected by the consultative committee. This examination shall be conducted by the consultative committee and such other members of the Faculty and qualified experts as may be selected by the Committee on Graduate Studies.

No later than the date specified in the University calendar the candidate must submit to the Dean three complete copies of the dissertation together with a fourth copy of the summary. Printed copies of detailed regulations regarding the form and reproduction of the dissertation and its summary (see pages 55-56), are available in the Office of the Dean. To be acceptable the dissertation must, in the opinion of the examining committee, constitute a substantial contribution to the field of law concerned and be suitable for publication. Additional information will be supplied by the Chairman of the Committee on Graduate Studies.

The summaries of accepted dissertations will be printed in a numbered issue of the University BULLETIN. The successful candidate for the doctorate is required, before receiving his degree, to pay a fee to cover the expense of printing the summary of his dissertation.

THE SCHOOL OF ENGINEERING

THE FACULTY AND STAFF OF INSTRUCTION*

Martin Alexander Mason, B.S. in Eng., Ing.-Dr., *Dean of the School of Engineering*

Carl Hugo Walther, B.E., M.C.E., *Assistant Dean in the School of Engineering*

Jack Edward Walters, M.S. in M.E., Ph.D., *Director, Engineering Administration Program*

Norman Bruce Ames, LL.B., E.E., M.S. in E.E., Dr. sc. techn., *Professor of Electrical Engineering*

Florence Marie Mears, Ph.D., *Professor of Mathematics*

Charles Rudolph Naeser, Ph.D., *Professor of Chemistry*

Carl Hugo Walther, B.E., M.C.E., *Professor of Civil Engineering*

Martin Alexander Mason, B.S. in Eng., Ing.-Dr., *Professor of Civil Engineering*

Jack Edward Walters, M.S. in M.E., Ph.D., *Professor of Engineering Administration*

Robert Aaron Hechtman, M.S. in C.E., Ph.D., *Professor of Civil Engineering*

Lewis Slack, Ph.D., *Professor of Physics*

Robert Hamilton Moore, Ph.D., *Professor of English Composition*

Ernest Frank, B.E.E., M.S. in E.E., Ph.D., *Professor of Electrical Engineering*

Forest Klaire Harris, Ph.D., *Professorial Lecturer in Electrical Engineering*

Waldo Edward Smith, B.E. in C.E., M.S. in C.E., *Professorial Lecturer in Civil Engineering*

Nathaniel Stewart, M.S., Ed.D., *Professorial Lecturer in Engineering Administration*

Frank Miller Reynolds, LL.M., B.S., *Professorial Lecturer in Engineering Administration*

Robert James Wilson, A.M., Ed.D., *Professorial Lecturer in Engineering Administration*

* The President of the University, the Dean of Faculties, the Dean and the Assistant Dean of the School, the Registrar of the University, the Director of Admissions of the University, Professors, Associate Professors, Assistant Professors, and Instructors constitute the Faculty.

- Franklin Porter Hall, Ph.D., *Professorial Lecturer in Engineering Administration*
- Keith Cyril Harder, Ph.D., *Professorial Lecturer in Engineering Administration*
- Melvin Raymond Meyerson, M.S. in Met.E., *Professorial Lecturer in Civil Engineering*
- Kenneth Seymour Colmen, B.A.E., Ph.D., *Professorial Lecturer in Engineering Administration*
- Frederick Charles Dyer, M.B.A., *Professorial Lecturer in Engineering Administration*
- Ralph Edward Fuhrman, B.S. in C.E., M.S. in Eng., D.Eng., *Professorial Lecturer in Civil Engineering*
- Robert Irving Sarbacher, Sc.D., E.E., *Professorial Lecturer in Engineering Administration*
- Charles Henry Conrad, B.S. in Arch., *Professorial Lecturer in Civil Engineering*
- Harold Joseph Barnett, Ph.D., *Professorial Lecturer in Engineering Administration*
- Ira Hubert Cisin, Ph.D., *Professorial Lecturer in Engineering Administration*
- Laurence Heilprin, Ph.D., *Professorial Lecturer in Engineering Administration*
- Howard Livingston Stier, Ph.D., *Professorial Lecturer in Statistics (Engineering Administration Program)*
- Sanford Thompson, Ph.D., *Professorial Lecturer in Mechanical Engineering*
- John Kaye, M.S. in M.E., *Associate Professor of Engineering Administration*
- Paul Arthur Crafton, B.M.E., Ph.D., *Associate Professor of Mechanical Engineering*
- Boone Doudy Tillett, LL.B., M.S., Sc.D., *Associate Professor of Engineering Administration*
- George Calvin Weaver, M.S., *Associate Professor of Mechanical Engineering*
- Louis Depian, Ph.D., *Associate Professor of Electrical Engineering*
- *David Gover White, B.Chem.Eng., Ph.D., *Associate Professor of Chemistry*
- Thomas Phillip George Liverman, Ph.D., *Associate Professor of Mathematics*
- Galip Mehmet Arkilic, Ph.D., *Associate Professor of Civil Engineering*

* On sabbatical leave 1959-60.

- Nelson Thomas Grisamore, Ph.D., *Associate Professor of Electrical Engineering*
- Alexander Walter Sumoski, Ph.D., *Associate Professorial Lecturer in Electrical Engineering*
- Albert Christian Murdaugh, B.S., M.S. in Met.E., *Associate Professor of Mechanical Engineering*
- Philip Sidney Morgan, Jr., B.S., M.S. in M.E., *Assistant Professor of Mechanical Engineering*
- Robert Steven Ledley, D.D.S., A.M., *Assistant Professor of Electrical Engineering*
- Morrow Harris Moore, Jr., M.S. in M.E., *Assistant Professor of Mechanical Engineering*
- Robert Alexander Hemmes, M.S., *Assistant Professor of Civil Engineering*
- Llewellyn Adam Rubin, M.S. in E.E., *Assistant Professor of Electrical Engineering*
- Dwight Edward Shytle, *Lecturer in Electrical Engineering*
- Kermit Milton Lovewell, B.S. in E.E., *Lecturer in Electrical Engineering*
- George Abraham, M.S., *Lecturer in Electrical Engineering*
- William Walter Balwanz, B.E.E., M.S. in E.E., *Lecturer in Electrical Engineering*
- George Pida, B.E.E., *Lecturer in Electrical Engineering*
- Robert William Pinnes, M.M.E., *Lecturer in Mechanical Engineering*
- William Alderson, M.S. in E.E., *Lecturer in Electrical Engineering*
- Irving Korobkin, B.M.E., M.S. in M.E., *Lecturer in Mechanical Engineering*
- Martin Aaron Garstens, A.M., Sc.D., *Lecturer in Engineering*
- Raphael David Cahn, B.M.E., *Lecturer in Mechanical Engineering*
- Frank Joseph Powell, M.S., *Lecturer in Mechanical Engineering*
- Peter Hans Sawitz, M.S. in E.E., *Lecturer in Electrical Engineering*
- Louis Samuel Rotolo, B.S. in E.E., *Lecturer in Electrical Engineering*
- James Russell Miles, Sr., A.B., M.E.A., *Lecturer in Engineering Administration*
- Robert Emerson Moffat, B.S. in C.E., M.C.E., *Lecturer in Civil Engineering*
- Phillip Wonn Mast, B.C.E., *Instructor in Civil Engineering*
- Clifford Duras Ferris, M.S. in M.E., *Instructor in Electrical Engineering*
- Derrill Conway Rohlf, B.E.E., *Associate in Electrical Engineering*
- William Reuthoven Smith III, B.S., B.E.E., *Associate in Electrical Engineering*

COMMITTEES*

THE DEAN'S COUNCIL†

1960

Ernest Frank

Paul Arthur Crafton

1961

Charles Rudolph Naeser

Robert Aaron Hechtman

1962

Jack Edward Walters

Albert Christian Murdaugh

COMMITTEE ON ADMISSION AND ADVANCED STANDING

Carl Hugo Walther, *Chairman*

Nelson Thomas Grisamore

Galip Mehmet Arkilic

Philip Sidney Morgan, Jr.

COMMITTEE ON SCHOLARSHIP

George Calvin Weaver, *Chairman*

Ernest Frank

David Gover White

Robert Alexander Hemmes

COMMITTEE ON GRADUATE STUDIES‡

John Kaye, *Chairman*

Ernest Frank

Thomas Phillip George Liverman

Paul Arthur Crafton

David Gover White

Galip Mehmet Arkilic

Keith Harder (Liaison Member)

Ronald J. Wylde (Liaison Member)

COMMITTEE ON RESEARCH

Ernest Frank, *Chairman*

Robert Steven Ledley

Robert Alexander Hemmes

Llewellyn Adam Rubin

THE ADVISORY COUNCIL

Allen Varley Astin, Ph.D., Sc.D., *Director of the National Bureau of Standards*Lyman James Briggs, Ph.D., Sc.D., LL.D., *Trustee of the University*Hugh Latimer Dryden, Ph.D., Sc.D., D.Eng., *Vice-President of Research of the National Advisory Committee for Aeronautics*

* The Dean of the School and the Assistant Dean in the School of Engineering are members ex officio of all committees. Membership of committees listed here is for the academic year 1968-69.

† Elected by the Faculty.

‡ Appointed by the Dean upon recommendation of the Faculty.

Ralph Leon Goetzenberger, B.S., E.E., *Educational Consultant, Minneapolis-Honeywell Regulator Company*

Daniel Charles Walser, B.S., *Consulting Engineer; former Chairman of the District of Columbia Board of Registration for Professional Engineers*

The Council is made up of friends of the University who are intimately familiar with the educational needs of the professional community served by the School. The Council is advisory to the Dean of the School of Engineering; it serves the function of relating the School to the educational requirements of the engineering and scientific constituency served by the School.

GENERAL INFORMATION

INTRODUCTORY

The School of Engineering was organized in 1884 as the Corcoran Scientific School. In 1903 that school was combined with Columbian University in the Department of Arts and Sciences. In 1905 the engineering courses were placed under an administrative organization known as the Washington College of Engineering, and in 1909 the name was changed to the College of Engineering and Mechanic Arts. In 1914 the name became the School of Engineering.

Curricula leading to the degrees of Bachelor of Civil Engineering, Bachelor of Mechanical Engineering, and Bachelor of Electrical Engineering are accredited by the Engineers' Council for Professional Development, the recognized accrediting body of the engineering profession.

OBJECTIVE

The objective of the School of Engineering is to produce graduates who possess knowledge and understanding of the fundamental scientific principles in their fields of study; some skill in their application; and an attitude of responsibility toward society and the engineering profession.

ORIENTATION PROGRAM*

Students in the School of Engineering participate in the Orientation Program of the University, which is held during the week preceding registration for the fall semester. Events of the program include an advising period when members of the Faculty and academic advisers in the School of Engineering are available for personal interviews to assist students in planning their programs to best prepare them for ultimate goals; an Orientation Assembly, required of all new students; a Curriculum Assembly, for guidance in the selection of courses for the coming

* See the calendar for dates of scheduled events.

semester; placement tests for new students who do not have advanced standing in mathematics and English; qualifying examinations for students who wish to waive curriculum requirements or qualify for advanced standing; scheduled social events; and the opportunity to discuss with older students and with staff members concerned with student activities the extracurricular program of the University, so that a wise and rewarding selection may be made.

The placement tests are required and are scheduled during Orientation week for students entering the School of Engineering, and again during the week prior to the spring registration for students entering at that time, so that the results will be available to students and advisers before registration as a guide to class placement. Students shown by the results of placement tests to be inadequately prepared are advised to take remedial work before undertaking Engineering curriculum courses in areas of deficiency.

PROGRAMS OF STUDY

Programs of undergraduate study are offered leading to the degrees of Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, and Bachelor of Science in Engineering (with optional areas of concentration).

Graduate work is offered under the supervision of the Committee on Graduate Studies, leading to the degrees of Master of Science in Engineering and Master of Engineering Administration.

ADVISORY SYSTEM

Every student entering the School of Engineering as an undergraduate degree candidate is assigned a permanent Faculty adviser—for the purpose of guiding the educational career of the student, providing assistance in his professional development as an engineer, establishing close relations between the Faculty and the student, and furnishing counsel and advice in all phases of the academic career of the student.

Faculty advisers counsel students on their programs of study, the achievement and maintenance of satisfactory scholastic performance, professional development, extracurricular activity as part of the educational process; and assist the entering student in orientation in the engineering discipline. The adviser represents the student in all cases requiring Faculty action.

Students who have not completed 70 semester hours satisfactorily are required to obtain their advisers' approval of programs of study prior to registration.

A student who has not completed the course work specified for the freshman and sophomore years is required to consult his adviser when so

directed by the Dean, and to follow the recommendations of his adviser in all academic matters. However, advisers may not deny a student entry into any course or activity to which he is entitled under the regulations of the School of Engineering. Students having junior or senior status are encouraged to consult their advisers. The Dean acts as temporary adviser to entering or transfer students pending assignment of their permanent advisers.

All students are encouraged to discuss college problems with their advisers or instructors at any time; and parents or guardians are invited to consult with the Dean and advisers, concerning any student problems.

Faculty advisers discharge their counseling duties in accordance with the high principles of their professional responsibility; however, the final responsibility for a student's action lies wholly with the student.

REGULATIONS

Students in the School of Engineering are subject to, and are expected to familiarize themselves with, the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 13-29, and the University regulations stated on pages 50-58.

AMOUNT OF WORK

A full-time undergraduate student who is not on probation may take not more than twenty semester hours. A student employed more than twenty-four hours a week, who is not on probation, may take not more than ten semester hours.

A student previously unemployed who accepts employment subsequent to registration or at any time during a semester is required to report that fact immediately to the Dean, in order that adjustments in schedule may be made, if necessary, to bring his program within the Faculty's limitations upon the amount of work to be carried by an employed student.

ATTENDANCE

A student is not permitted to attend classes until registration has been completed and fees due have been paid. Regular attendance is required. A student may be dropped from any course for undue absence.

A student who has been suspended, either for delinquency in payment of fees or for any other reason, is not permitted to attend classes during the period of suspension.

The student is expected to attend every meeting of the course in which he is registered, fully prepared to carry on the work required. The student is held responsible for all work in the course, and all absences must be excused before provision will be made for him to make up the work

missed. Excuses for absences from examinations which have been announced in advance can be obtained only by making written application to the instructor in charge of the course.

CHANGES IN PROGRAM OF STUDIES

In addition to the general University regulations on pages 52-53, the following regulations apply to students in the School of Engineering:

During the seven days following the first day of classes of a semester, additional courses may be added to the student's program with the approval of the instructor, the student's adviser, and the Dean.

No change in program may be made, without academic penalty, after the fourteenth day following the first day of classes of a semester, except in exceptional cases when the Dean, upon recommendation of the Committee on Scholarship, may approve withdrawal from *all courses*. Written request for such withdrawal, stating satisfactory reasons, should be addressed to the Committee on Scholarship.

Unauthorized withdrawal from a course at any time entails a penalty of failure in the course and financial responsibility for the full fee for the course.

HONORS LIST

The Faculty of the School of Engineering recognizes meritorious scholastic achievement by an Honors List, containing in alphabetical order the names of candidates for undergraduate degrees in engineering, whose scholastic achievement satisfies all of the following requirements:

1. The candidate's cumulative quality-point index is equal to or exceeds 3.00.
2. At least 30 semester hours of credit have been earned while a degree candidate in the School of Engineering.
3. At least 15 (part-time student) or 30 (full-time student) semester hours of credit in an engineering degree curriculum have been earned in the two semesters immediately preceding the award.
4. No grade below C has been received during the qualifying period stated above.
5. No disciplinary action has been taken in respect to the student.

The Honors List is prepared at the end of the fall and spring semesters, and displayed in an appropriate public place in the School of Engineering. A notation is made on the student's record each time his name is included in an Honors List.

THE BACHELOR'S DEGREES

The Bachelor's degrees are: Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, and Bachelor of Science in Engineering.

The degree of Bachelor of Science in Engineering may be earned with any of the following options: Chemistry, Engineering Administration, Machine Computer, Mathematics, or Physics.

Curricula leading to the degrees of Bachelor of Civil Engineering, Bachelor of Mechanical Engineering, and Bachelor of Electrical Engineering are accredited by the Engineers' Council for Professional Development, the recognized accrediting body of the engineering profession.

REQUIREMENTS FOR THE DEGREES

SCHOLARSHIP

A student must maintain a quality-point index of at least 2.00 to be in good academic standing.

A student who fails to maintain the scholarship requirements of the School of Engineering may be dismissed from the University.

In order to graduate, a student must have a quality-point index of at least 2.00 in all work taken at The George Washington University and accepted in the School of Engineering. Passing grades are essential in required courses in Physical Education, but the grades so earned are not included in the quality-point index.

Mid-semester Warning.—At the end of the seventh week of each semester, instructors report to the Dean the names of those students whose scholarship is tentatively deemed unsatisfactory. A warning notice is sent to the student and a copy to his adviser. A student who receives warning notices is required to consult his instructor and his adviser immediately.

The adviser may prescribe diagnostic tests and/or remedial study to be completed before the end of the current semester.

Probation.—A student whose quality-point index falls below 2.00 will be placed on probation. This probation will extend over the period in which the student attempts 12 semester hours of study. In certain circumstances the period of probation may be extended.

A student on probation is required to follow a program of study, including remedial studies if necessary, prescribed by the Committee on Scholarship. A student on probation may not hold office or participate in the activities of any student organization or represent the School in any student activity.

Suspension.—A student whose quality-point index is below 2.00 at the end of his probationary period will be suspended. A student whose quality-point index falls below 2.00, after he has once been removed from probation, will be suspended.

At the time of his suspension a student may apply to the Committee on Scholarship for guidance concerning remedial action he should take during the period of his suspension.

A student suspended for poor scholarship may apply* to be readmitted in the semester or summer session which begins next after an interval of one year. To be considered for readmission he will be required to pass tests or examinations prescribed by the Committee on Admission and Advanced Standing. No advanced standing will be assigned for any course work taken during the period of suspension. A student readmitted after suspension will be on probation and will be required to raise his quality-point index to 2.00 within 12 semester hours of study, or be suspended. A student suspended twice for poor scholarship will not be readmitted.

The foregoing scholarship regulations are applied when a student has completed a minimum of 12 semester hours of work. Thereafter, the regulations are applied in multiples of 12 hours.

USE OF CORRECT ENGLISH

Any student whose written or spoken English in any course whatever is deemed unsatisfactory may be reported by the instructor to the Dean's Council. The Council may assign supplementary work, without academic credit, varying in amount with the needs of the student. If the work prescribed is equivalent to a course, the regular tuition fee is charged. The granting of a degree may be delayed for failure to make up any such deficiency in English to the satisfaction of the Dean's Council.

RESIDENCE

For the Bachelor's degrees, a minimum of one year or 36 semester hours must be completed in residence. Summer work may be counted in residence, but in no case may the period of residence aggregate less than thirty weeks. Unless special permission is granted by the Dean to pursue work elsewhere, the work of the senior or final year must be completed in residence.

CURRICULUM REQUIREMENTS

The satisfactory completion of one of the following curricula is required.

Physical Education is required of all students in the freshman and sophomore years. (See "Physical Education Requirements", pages 53-54.)

Variations from the prescribed curricula may be made, with the permission of the Dean's Council. A student desiring to omit a required course and substitute another must make written application to the Dean

* Application for readmission should be made two months in advance to permit the taking and grading of readmission tests.

presenting satisfactory reasons for the substitution; and written approval must be obtained and the required fee must be paid before registration for the course.

A student who is absent from the University for one semester or more is required to satisfy the curriculum requirements existing at the time of his return, unless during his absence he maintains "in residence" status, see page 55.

FRESHMAN YEAR (FOR ALL ENGINEERING CURRICULA)*		Semester Hours
Chem 11-12	General Chemistry	8
†Eng. 1	English Composition	3
Math. 12	Analytic Geometry	3
Math. 29, 30, 31	Calculus I, II, III.....	9
ME 9	Introduction to Engineering.....	3
ME 10	Graphical Communication	2
Phys. Ed.	See pages 53-54 for statement of requirement.	
Phys. 11	Introductory Physics	3
Phys. 14	General Physics	3
Total.....		34

ROTC.—Air Force ROTC students substitute Air Science 1-2, 21, and 22 (6) for Physical Education 1-2 (2), and may postpone English 1 until the sophomore year.

SOPHOMORE YEAR (FOR ALL ENGINEERING CURRICULA)		Semester Hours
CE 12	Surveying (for B.C.E. candidates only).....	3
CE 21	Statics	3
CE 24	Strength of Materials.....	3
EE 11	Electric Circuits	3
EE 12	Electric Machinery	3
Eng. 2	English Composition	3
Math. 111, 112	Mathematics for Engineers and Physicists I, II.....	6
Phys. Ed.	See pages 53-54 for statement of requirement.	
Phys. 15, 16	General Physics	6
‡Elective	In humanities or social studies (for B.E.E., B.M.E., and B.S. in Eng. candidates only).....	3
Elective	In humanities or social studies (see page 150).....	6
Total.....		36

ROTC.—Air Force ROTC students substitute Air Science 11-12, 51, and 52 (6) for Physical Education 11-12 (2) and Elective (3).

* Exceptional students may qualify for admission to advanced courses by successfully completing qualifying examinations.

† Before students are registered in English 1, they are tested in the minimum essentials of vocabulary, spelling, grammar, standard usage, and writing skill. Those students who show marked superiority may, upon passing further tests, be exempted from one or both semesters of the English Composition course; those who are inadequately prepared for English 1 will be assigned to English A, for which credit will be given unless it is used to satisfy entrance requirements.

‡ B.E.E. candidates may elect Speech 1 or English 11.

Bachelor of Civil Engineering

JUNIOR YEAR

		Semester Hours
CE 121	Dynamics	3
CE 125	Engineering Materials	4
CE 132	Fluid Mechanics	3
CE 143-44	Structural Theory I-II	8
EE 102	Engineering Electronics	3
ME 113	Thermodynamics I	3
ME 118	Heat Transfer	3
Elective	In humanities or social studies (see page 150)	7

Total..... 34

ROTC.—Air Force ROTC students substitute Air Science 101 and 102 (6) for Elective (4).

SENIOR YEAR

		Semester Hours
CE 128	Substructures	3
CE 135	Hydraulic Engineering	3
CE 138	Sanitary Engineering	3
CE 145	Metal Structures	3
CE 146	Reinforced Concrete	3
CE 154	Structural Dynamics	3
CE 157	Advanced Strength of Materials	3
CE 163	Transportation Engineering	3
CE 168	Regional and Urban Planning	3
Elective	In humanities or social studies (see page 150)	0
Elective	Technical Elective	3

Total..... 30

ROTC.—Air Force ROTC students substitute Air Science 151-52 (6) for Technical Elective (3).

Bachelor of Electrical Engineering

JUNIOR YEAR

		Semester Hours
CE 121	Dynamics	3
EE 102	Engineering Electronics	3
EE 103	Electric and Magnetic Fields	3
EE 104	Field Analysis	3
EE 107	Steady-state Network Analysis	4
EE 111, 112	Electrical Measurements	4
EE 113-14	Electric Power Laboratory	3
EE 118	Electrical Energy Conversion	3
EE 122	Measurements and Electronics Laboratory	3
Phys 116	Quantum and Solid State Physics	3
Elective	In humanities or social studies (see page 150)	3

Total..... 30

ROTC.—Air Force ROTC students substitute Air Science 101 and 102 (6) for Elective (3).

SENIOR YEAR

	Semester Hours
CE 132	Fluid Mechanics
EE 123	Electronic Devices and Systems Laboratory.....
EE 124	High-frequency Communications Laboratory.....
EE 127	General Network Analysis.....
EE 133	Engineering Analysis
EE 136	Electromagnetic Waves
EE 137	Electronic Circuits and Systems.....
EE 171	Digital Circuitry and Systems.....
EE 189-90	Proseminar in Electrical Engineering.....
ES 154	Automatic Control
ME 113	Thermodynamics I
Elective	In humanities or social studies (see page 150).....
Total.....	34

ROTC.—Air Force ROTC students substitute Air Science 151-52 (6) for Elective (3).

Bachelor of Mechanical Engineering

JUNIOR YEAR

	Semester Hours
CE 121	Dynamics
CE 125	Engineering Materials
CE 132	Fluid Mechanics
EE 102	Engineering Electronics
ME 100	Analytical Kinematics
ME 113, 114	Thermodynamics I, II.....
ME 118	Heat Transfer
ME 120	Physical Metallurgy
Phys. 116	Quantum and Solid State Physics.....
Phys. 191	Nuclear Reactors
Elective	In humanities or social studies (see page 150).....
Total.....	36

ROTC.—Air Force ROTC students substitute Air Science 101 and 102 (6) for Elective (2).

SENIOR YEAR

	Semester Hours
CE 157	Advanced Strength of Materials.....
ME 123	Advanced Dynamics I.....
ME 124	Advanced Dynamics II.....
ME 135-36	Thermal Power
ME 139	Fluid Machinery
ME 143	Production Analysis
ME 146	Dynamics of Compressible Fluids.....
ES 154	Automatic Control
Elective	In humanities or social studies (see page 150).....
Total.....	34

ROTC.—Air Force ROTC students substitute Air Science 151-52 (6) for Elective (3).

Bachelor of Science in Engineering

JUNIOR AND SENIOR YEARS		Semester Hours
CE 121	Dynamics	3
CE 125	Engineering Materials	4
CE 132	Fluid Mechanics	3
EE 102	Engineering Electronics	3
EE 103	Electric and Magnetic Fields.....	3
ME 100	Analytical Kinematics	3
ME 113	Thermodynamics I	3
ME 118	Heat Transfer	3
ME 120	Physical Metallurgy	3
Phys. 116	Quantum and Solid State Physics.....	3
Total of required courses		31
Option	As approved by the Department of Option and by the Dean of the School of Engineering.....	30
Elective	In humanities or social studies (see page 150).....	9
Total.....		70

ROTC.—Air Force ROTC students substitute Air Science 101 and 102 and 151-52 (12) for Elective (3) and Option course (3).

The Bachelor of Science in Engineering curriculum provides training in the basic physical principles employed in engineering and in engineering methods of analysis, and in addition, offers an opportunity for study in optional fields in which the student has special interest.

Optional study can be selected from the fields of Chemistry, Engineering Administration, Machine Computer, Mathematics, or Physics. The program of study in the option is formulated by the department concerned in conference with the student. The program, bearing the approval of the Executive Officer of the department concerned, must be submitted by the student to the Dean before the beginning of the junior year.

ELECTIVE IN HUMANITIES AND SOCIAL STUDIES

Required elective courses in the humanities and social studies may be selected from the offerings of the following departments of instruction: Art, Classical Languages and Literatures, English, Germanic Languages and Literatures, Philosophy, Religion, Romance Languages and Literatures, Slavic Languages and Literatures, Economics, Geography, History, Political Science, Sociology and Anthropology.

GRADUATE RECORD EXAMINATIONS

During the final semester of the senior year students in the School of Engineering are required to take the following Graduate Record Examinations: the Aptitude Test, which provides a measure of general scholastic ability at the graduate level; and the Advanced Test (For

neering) designed to measure the achievement of the college senior in his major field of study. (For further information concerning the Graduate Record Examinations, see page 55.)

THE MASTER'S DEGREES

Upon satisfactory completion of appropriate graduate requirements, the degree of Master of Science in Engineering or Master of Engineering Administration is conferred.

Study for the Master's degree is based upon a faculty-student relationship in which the ability and needs of the individual student are important elements in determining the curriculum. Programs are not restricted to one department or to a single field or type of study. They may include special instruction by assigned members of the engineering faculty or approved courses offered in other colleges and schools of the University. The Committee on Graduate Studies has the responsibility for establishing each student's program and for providing for its direction.

ADMISSION TO GRADUATE STUDY

For admission to graduate study the student must hold a Bachelor's degree from a recognized institution; satisfy the Committee on Graduate Studies of his capacity for productive work in the discipline; and give evidence of preparation which, in the opinion of the Committee, is adequate for graduate study in the field selected.

Applicants who have significant deficiencies in their preparation for graduate study may undertake prescribed undergraduate programs to qualify for admission as graduate students in the School of Engineering.

In some cases such undergraduate study may be carried on in addition to a limited graduate program. In no case may the undergraduate courses fulfill any part of the requirements for the graduate degree.

Admission to Degree Candidacy

Application for admission to candidacy for a Master's degree must be made in writing to the Committee on Graduate Studies. To be accepted the applicant must have (1) been accepted for graduate study, (2) satisfactorily completed nine semester hours of graduate courses, and (3) give evidence of satisfactory personal and intellectual qualifications. In exceptional cases the requirement of nine semester hours of graduate courses may be reduced.

ADVANCED STANDING

Graduate courses completed before admission to graduate study are not transferrable for degree credit. The Committee on Graduate Studies

has the discretion, however, to consider them in establishing individualized programs. Course work to satisfy degree requirements in another school or college of the University may not be so applied in the School of Engineering.

REQUIREMENTS FOR THE DEGREES

Residence

The candidate for a Master's degree must complete a minimum of one year of full-time study, or the equivalent in part-time study, under the direction of the Committee on Graduate Studies. A full-time student must complete all requirements for the degree within three years; a part-time student, within five years.

Scholarship

A minimum grade of "Satisfactory" is required in all courses. A student who makes one grade of "Unsatisfactory" may repeat the course once, or he may appeal to the Committee on Graduate Studies for guidance. A student who receives two or more grades of "Unsatisfactory" will not be permitted to enroll further in the School of Engineering until he demonstrates by examination, or as the Committee may direct, that his deficiencies in course work have been removed. A grade of *B* or better is required for undergraduate courses taken to remove deficiencies in preparation for graduate study.

Master's Problem

The degree candidate must submit an acceptable Problem to demonstrate his ability to make independent use of the knowledge and discipline of thought acquired and developed by graduate study, and to furnish objective evidence of constructive power in a given field. Work of a suitable character for which the student has professional responsibility may be considered, whether done on or off campus, provided no significant amount of work is completed without faculty supervision. The Master's problem in its final form must have the approval of the professor in charge and must be presented to the Dean by the student no later than the date announced in the University calendar. Printed copies of detailed regulations regarding the form and reproduction of the Master's problem (see pages 55-56) are available in the Office of the Dean.

Comprehensive Examination

To demonstrate substantial understanding of principles and methods of their use in the area of his interest, the student must pass a comprehensive examination, written, oral, or both, as prescribed by the Committee on Graduate Studies. This examination will not be taken until

the candidate has successfully completed the prescribed program of study and submitted an acceptable Master's Problem.

THE DEGREE OF MASTER OF SCIENCE IN ENGINEERING

The objective of this discipline is a substantial comprehension of scientific principles and methods for their use, as applied in modern engineering. Increased understanding of engineering science and its use in solving engineering problems are sought, rather than a breadth of familiarity with applications and techniques.

A program of study consisting of at least 24 semester hours of graduate courses to prepare the candidate for his comprehensive examination is formulated from the following areas with particular attention to the individual student's needs and objectives. The program may provide for broad coverage in a variety of fields or may be designed to give some degree of specialization in a particular area, as determined by conference with the Committee at the time of admission to candidacy.

The level of the courses ordinarily requires as prerequisite the satisfactory completion of at least one undergraduate course in mathematics beyond the first course in ordinary differential equations and at least one in the area of the graduate course to be undertaken.

REQUIRED COURSES

Upon admission to graduate study, the following courses must be taken prior to application for admission to candidacy for the degree:

ES 211 Analysis of Engineering Systems I (3)

ES 217 Analytical Mechanics (3)

In addition a choice must be made of one or two courses in the areas marked by an asterisk in the Fundamental Engineering group below.

PROGRAM OF STUDY

After admission to candidacy for the degree, the balance of the program may be arranged in consultation with the Committee on Graduate Studies from the following:

Basic

Mathematics.—Theory of functions of a complex variable, mathematical statistics, mathematical probability, vectors, tensors, matrices.

Physics.—Classical field theory, quantum mechanics, solid state physics, nuclear physics.

Applied Mathematics.—Numerical and graphical analysis, advanced mathematics for engineers.

Fundamental Engineering

*Automatic Control
 *Elasticity
 Elastic Stability
 *Electric Networks
 *Electromagnetic Fields
 Electronics
 *Fluid Dynamics
 Gas Dynamics

Heat Transfer
 Modulation and Noise
 Nonlinear Mechanics
 Plates and Shells
 Plasticity
 *Structural Theory
 *Thermodynamics
 *Transients

Elective

This group is comprised of courses offered occasionally in such areas as digital computers, high-speed aerodynamics, jet propulsion, potential theory, structural analysis, and transistors. In addition, graduate courses in areas not included in the Basic group offered by the departments of Mathematics, Statistics, Physics, and Chemistry may be taken for degree credit with the approval of the Committee. In general, work in areas which are characterized by a scientific discipline may be accepted in satisfaction of course requirements for the degree of Master of Science in Engineering.

THE DEGREE OF MASTER OF ENGINEERING ADMINISTRATION

The objective of this discipline is to develop an understanding of the principles and a competence in the practices of administration as applied to engineering and scientific activities. Knowledge and understanding are sought rather than mere familiarity with techniques.

A study program is prescribed for each candidate, in accordance with his preparation and objective, by the Committee on Graduate Studies or an assigned adviser. Programs are integrated sequences of courses.

The degree of Master of Engineering Administration is granted upon the successful completion of (1) 30 semester hours of graduate courses including the written Master's Problem, and (2) the Comprehensive Examination.

PREREQUISITE TO ADMISSION TO CANDIDACY

In addition to the requirements for admission to candidacy stated on page 151, the applicant must have a knowledge of the principles of human relations, the fundamentals of accounting, and the fundamentals of statistics. This requirement may be met (1) by the successful completion of the following undergraduate courses or an approved equivalent: Psychology 145 *Principles of Human Relations*, Accounting: General Accounting, Statistics 51 *Introduction to Business and Economics*.

Statistics, or (2) by demonstrating an acceptable knowledge acquired from experience in the subject fields.

PROGRAM OF STUDY

The content of the courses immediately following is considered essential knowledge for every candidate for the degree of Master of Engineering Administration. The candidate is required to complete all of the courses except those in which he (1) has successfully completed graduate study or (2) can demonstrate to the Committee on Graduate Studies an acceptable knowledge of the course field.

	Semester Hours
EA 201 Engineering Administration I.....	3
EA 202 Engineering Administration II.....	3
EA 271 Operations Research	3
EA 290 Problems in Engineering Administration.....	3
EA 291 Master's Problem	3

The following courses provide knowledge in certain special areas of significance in engineering administration. The candidate is required to select at least one; it is preferable that he elect all three.

	Semester Hours
EA 251 Management of Research and Development.....	3
EA 252 Production and Maintenance Management.....	3
Stat. 262 Managerial Statistics and Quality Control.....	3

Elective

Courses are to be elected to provide a total of 30 semester hours for the program.

	Semester Hours
EA 191 Engineering Law	3
EA 205 Engineer and Society.....	3
EA 206 Professional Management Development and Personnel Relations	3
EA 211 Communication of Ideas.....	3
EA 261 Economic Analysis in Engineering Planning.....	3
EA 263 Quantitative Techniques of Engineering Administra- tion	3
EA 272 Problems in Operations Research.....	3
EA 271-74 Techniques of Operations Research	6
EA 295 Applied Research in Engineering Administration (arr.)	
EA 296 Research in Engineering Administration (arr.)	
Acct. 211-12 Managerial Accounting	6
Acct. 293 Budget Preparation and Control.....	3
Bus. Adm. 250 Contract Administration.....	3
Geog. 271 Engineering Geography	3
Pub. Adm. 213 Administration in Government.....	3
Stat. 271-72 Statistical Information Theory.....	6
Elective (To be selected from Engineering or the sciences), as approved by the Committee on Graduate Studies	3-6

THE SCHOOL OF PHARMACY

THE FACULTY AND STAFF OF INSTRUCTION*

Charles Watson Bliven, M.S., *Dean of the School of Pharmacy*
Robert Meyer Leonard, Ph.D., *Assistant Dean of the School of Pharmacy*

Ralph Dale Kennedy, Ph.D., *Professor of Accounting*
Ira Bowers Hansen, Ph.D., *Professor of Zoology*
Charles Watson Bliven, M.S., *Professor of Pharmacy*
Chester Elwood Leese, Ph.D., *Fry Professor of Physiology*
Carleton Raymond Treadwell, Ph.D., *Professor of Biochemistry*
George Martin Koehl, A.M., *Professor of Physics*
Robert Corbin Vincent, Ph.D., *Professor of Chemistry*
Russell Bradford Stevens, Ph.D., *Professor of Botany*
Robert Hamilton Moore, Ph.D., *Professor of English Composition*
Robert Meyer Leonard, Ph.D., *Associate Professor of Pharmacology and Pharmacognosy*
Carson Gray Frailey, A.B., LL.B., *Associate Professorial Lecturer on Pharmaceutical Law*
John William Skinner, Ph.D., *Assistant Professor of Economics*
Franklin Dero Cooper, M.S., *Assistant Professor of Hospital Pharmacy*
Charles Joseph Kokoski, Ph.D., *Assistant Professor of Pharmacy*
Samuel Meyer Schwartz, Ph.D., *Assistant Professor of Pharmaceutical Chemistry*
Rudolph Hugh, Ph.D., *Assistant Professor of Bacteriology*
Gust George Koustenis, B.S. in Phar., M.B.A., *Instructor in Pharmaceutical Administration*

SPECIAL LECTURERS

William Paul Briggs, M.S., Sc.D., LL.D., *Executive Director and Secretary, American Foundation for Pharmaceutical Education; Pharmacy Training*
John Christian Krantz, Jr., Ph.D., *Professor of Pharmacology, University of Maryland; Pharmacological Research*
Justin Lawrence Powers, Ph.D., *Chairman, Committee on National Formulary, American Pharmaceutical Association; Official Drug Standards*

* The President of the University, the Dean of Faculties, the Dean and Assistant Dean of the School, the Registrar of the University, the Director of Admissions of the University, the Professors, Associate Professors, and Assistant Professors constitute the Faculty.

- Louis Edward Kazin, Phar.G., *Editor, Drug Topics*; Contemporary Pharmacy
 Nevis Eugene Cook, B.S., B.S. in Phar., *Assistant to the Director, Bureau of Enforcement, Food and Drug Administration*; Drug Control
 Karl Bambach, Ph.D., *Executive Vice-President, Pharmaceutical Manufacturers Association*; Pharmaceutical Industry
 Daniel Leo Finucane, B.S., M.D., *Director of Public Health, District of Columbia*; Public Health
 William Shoulden Apple, Ph.D., *Assistant Secretary, American Pharmaceutical Association*; Pharmaceutical Organizations

COMMITTEES*

THE DEAN'S COUNCIL†

Ralph Dale Kennedy

Ira Bowers Hansen

Samuel Meyer Schwartz

COMMITTEE ON SCHOLARSHIP

Robert Corbin Vincent, *Chairman*

Robert Meyer Leonard

Samuel Meyer Schwartz

COMMITTEE ON ADMISSION AND ADVANCED STANDING

Robert Meyer Leonard, *Chairman*

Charles Watson Bliven

Charles Joseph Kokoski

ADVISORY COMMITTEE

Irving Alexander Tennyson, *Chairman*

Howard Bradbury

William Paul Briggs

Harold Clayton Kinner

Fred Royce Franzoni

GENERAL INFORMATION

INTRODUCTORY

In 1867 the foundation for the National College of Pharmacy was laid by the Apothecaries' Association of the District of Columbia. The College was opened in 1872 and continued until 1906, when it became affiliated with The George Washington University.

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education as a class "A" school. It is a member of the American Association of Colleges of Pharmacy.

* The Dean and Assistant Dean of the School of Pharmacy are members ex officio of all committees.

† Elected by the Faculty.

Washington offers many opportunities for the student of pharmacy. The American Institute of Pharmacy, the headquarters of the American Pharmaceutical Association, is only a few blocks from the School of Pharmacy. The Institute also houses a pharmaceutical museum, a library, and research laboratories. Government agencies and laboratories whose activities are closely allied to pharmacy, and the government libraries, the facilities of which are open to the student, are readily accessible.

The Institute and the Federal Government bring to Washington leaders in the fields of pharmacy, many of whom present to senior students in the School of Pharmacy current professional information.

The objectives of the School of Pharmacy are (1) to train professionally competent pharmacists, primarily for retail practice, and to help them acquire specialized training, a general education, and an attitude of responsibility to their profession and to society; (2) to promote the health profession of pharmacy in general, and particularly within the community.

To achieve these objectives, the School has developed a systematic plan of instruction for the professional courses which is integrated with the liberal arts program. It further encourages student participation in university, professional, and civic organizations and activities which increase professional competence, raise professional standards, and help develop social responsibility.

REGULATIONS

Students in the School of Pharmacy are subject to and are expected to familiarize themselves with the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES as stated on pages 13-20, and the University regulations stated on pages 50-58.

Students registered in the Junior College Pharmacy curriculum are subject to the regulations of the Junior College. However, in the professional courses of that curriculum, the attendance requirements of the School of Pharmacy prevail.

AMOUNT OF WORK

Normal work for any year is that outlined under the head of "Curriculum Requirements", below. A student who wishes to take more than the normal amount of work may do so only with the permission of the Committee on Scholarship, the members of which are guided in their decision by his scholastic record and the extent to which he is employed. A student on probation is limited in the number of semester hours he may carry.

The student is not encouraged to undertake outside employment while attempting a full course of study. A student who maintains a quality-

point index of 2.00 or higher for all courses and a quality-point index of 2.50 or higher for pharmacy courses may be granted permission by the Dean to undertake outside employment. The amount of employment permitted is governed by the scholarship record of the student and the number of semester hours for which he is registered.

A student previously unemployed who accepts employment subsequent to registration or at any time during a semester is required to report that fact immediately to the Dean.

ATTENDANCE

Except by special permission of the instructor, credit will not be given for any pharmacy course if absences, including both lecture and laboratory, exceed in number for each semester the hours of credit for the semester. If a course has distinct divisions such as lectures, laboratories, or recitations, the absences apply pro rata to such divisions.

EXAMINATIONS BEFORE STATE BOARDS OF PHARMACY

To be eligible for examination before state boards of pharmacy, the applicant is required to present satisfactory evidence of graduation from a college of pharmacy. In addition, most states require that the applicant have one year of practical experience in a pharmacy. This experience may not be gained concurrently with the school year.

THE DEGREE OF BACHELOR OF SCIENCE IN PHARMACY

Upon the satisfactory completion of the requirements of the School of Pharmacy, the degree of Bachelor of Science in Pharmacy is conferred.

REQUIREMENTS FOR THE DEGREE

SCHOLARSHIP

The system of grading and of computing scholarship is described in detail on pages 50 and 51.

In order to graduate, a student must have a general quality-point index of at least 2.00. In addition, he must have a quality-point index of at least 2.50 in all pharmacy courses.

Probation.—A student must maintain a general (over-all) quality-point index of 2.00 and a pharmacy quality-point index of 2.50 or be placed on probation.

The following scholarship rules on general quality-point index are applied when a student has undertaken a multiple of 9 semester hours.

The rules on pharmacy quality-point index are applied when a student

has completed 12 pharmacy semester hours and thereafter are applied in multiples of 9 hours.

First Probation.—A student is placed on first probation when his general quality-point index is below 2.00 or his pharmacy quality-point index is below 2.50. (See also under suspension.)

Second Probation.—A student who has a general quality-point index below 2.00 or a pharmacy quality-point index below 2.50 after a multiple of 9 semester hours is placed on second probation. However, a student who has a general quality-point index between 1.50 and 2.00 will be considered by the Committee on Scholarship. A student who has a pharmacy quality-point index between 2.20 and 2.50 will be considered by the Committee. In each case, the Committee may retain him on probation or suspend him.

Suspension.—A student who has a general quality-point index below 1.50 or a pharmacy quality-point index below 2.20 will be suspended; however, a student who has a general quality-point index between 1.40 and 1.50 will be considered by the Committee on Scholarship. A student who has a pharmacy quality-point index between 2.00 and 2.20 will be considered by the Committee. In each case, the Committee may retain him on probation or suspend him.

A student who is subject to probation for the third time, whether successive or after an interval, will be suspended. In considering a student for suspension, the rules on probation shall apply to either the general or the pharmacy quality-point index with probations for each index independent of the other index.

A student suspended for poor scholarship may apply for readmission after an interval of a calendar year. He must then submit evidence to the Dean of the School of Pharmacy that during his absence from the University he has so conducted himself as to indicate that he will profit by readmission. A student suspended twice for poor scholarship will not be readmitted.

CURRICULUM

The Junior College Pharmacy curriculum (see page 72) comprises the first two years of the four-year pharmacy course. The curriculum is established by the faculties of the School of Pharmacy and the Junior College in accordance with professional needs, and complies, in so far as possible, with the latter group regarding the general cultural studies.

The laboratory method of teaching is used. Recitation classes are held in connection with each course in order to provide systematic drill in the subjects.

The curriculum requirements include at least 141 semester hours. The following curriculum leads to the degree of Bachelor of Science in Pharmacy.

Freshman and Sophomore Years

Courses	Did. hrs.*	Lab hrs.*	Sem. hrs.	Clock hrs.*
Courses in the Junior College (see page 72).....	880	656	73	1536

Junior Year: Fall Semester

Courses	Did hrs.	Lab hrs.	Sem. hrs.	Clock hrs.
Chemistry 21.....	32	96	4	128
Pharmacy 101.....	32	48	3	80
Pharmacy 105.....	32	....	2	32
Pharmacy 107.....	48	....	3	48
Physiology 115.....	48	....	3	48
Physiology 117.....	....	48	1	48
Total.....	192	192	16	384

Junior Year: Spring Semester

Courses	Did hrs.	Lab hrs.	Sem. hrs.	Clock hrs.
Bacteriology 112.....	48	96	4	144
Chemistry 22.....	32	96	4	128
Pharmacy 102.....	32	96	4	128
Pharmacy 106.....	32	....	2	32
Pharmacy 110.....	48	....	3	48
Total.....	192	288	17	480

Senior Year: Fall Semester

Courses	Did hrs.	Lab hrs.	Sem. hrs.	Clock hrs.
† Biochemistry 221.....	32	96	4	128
Pharmacy 103.....	32	96	4	128
Pharmacy 111.....	48	....	3	48
Pharmacy 165.....	48	....	3	48
Elective	48	....	3	48
Total.....	208	192	17	400

* Exclusive of Physical Education.

† Students planning to do graduate work may request the substitution of other courses for Biochemistry 221-22 if these courses will be included in the graduate curriculum.

Senior Year: Spring Semester

Courses	Did hrs.	Lab hrs.	Sem. hrs.	Clock hrs.
Bacteriology 210.....	32	....	2	32
Biochemistry 222.....	32	96	4	128
Pharmacy 166.....	32	64	3	96
Pharmacy 176.....	32	....	2	32
Pharmacy 178.....	64	....	4	64
Pharmacy 188.....	48	....	1	48
Pharmacy 190.....	16	....	1	16
Pharmacy 192.....	....	48	1	48
Total.....	256	208	18	464
Grand Total.....	1728	1536	141	3264

THE DEGREE OF MASTER OF SCIENCE IN PHARMACY†

Upon the satisfactory completion of the graduate requirements of the School of Pharmacy, the degree of Master of Science in Pharmacy is conferred.

DEFINITION OF THE MASTER'S WORK

The study leading to the degree of Master of Science in Pharmacy is a comprehensive survey of one or more of the fields of knowledge embraced by Pharmacy. It is a continuation of the work of the student's undergraduate major and involves a greater acquaintance with scholarly method.

The student must satisfy certain minimum requirements as to previous preparation, residence, ability to read an approved modern foreign (European) language, and courses taken; but these requirements, while essential, are regarded primarily as qualifying measures. The student's knowledge of his field, as demonstrated by his thesis and by the results of his Master's examination (together with such other examinations involving special skills or techniques as may be required), is the basis upon which the Master's degree is conferred. The foreign language requirement may be waived by faculty action in the instance of students whose field of study at the Master's level may not require such preparation.

* Students planning to do graduate work may request the substitution of other courses for Biochemistry 222-22 if these courses will be included in the graduate curriculum.

† Courses applicable to this degree are not offered in 1959-60.

REQUIREMENTS FOR THE DEGREE

RESIDENCE

An academic year of residence is required, i.e., completion of a minimum of 30 semester hours of work including the thesis, which is counted as the equivalent of 6 hours of course work. Summer work may be counted in residence, but in no case may the period of residence aggregate less than twenty-seven weeks. Not more than 12 hours (which must be approved in advance by the Dean of the School of Pharmacy) may be taken in another school or division of this University, and such work may not be counted toward both a degree in that school or division and the Master's degree in the School of Pharmacy.

AMOUNT OF WORK

A student whose previous preparation in his chosen field has been adequate may complete his requirements, including the thesis, by a minimum of 30 semester hours; others are required to do additional work. First-group courses may not be credited toward the Master's degree. Pharmacy courses numbered below 200 may be credited toward the Master's degree only when registration for graduate credit has been approved at the beginning of the course by the instructor and the Dean of the School of Pharmacy.

ADMISSION TO CANDIDACY

In addition to admission requirements stated on page 21 the applicant for admission to candidacy for the Master's degree must be approved by the appropriate representative of the Department of Pharmacy and by the Dean.

SCHOLARSHIP

A student whose scholarship is considered unsatisfactory may be suspended by the Dean upon recommendation of the staff member under whom the student is working.

THE THESIS

The thesis may be of a research, expository, critical, or creative type.

The main purpose of a Master's thesis is to demonstrate the student's ability to make independent use of the information and training acquired through his other disciplines, and to furnish objective evidence of his constructive powers in his chosen field. Registration for the thesis must be no later than the beginning of the final year of preparation, unless the professor in charge of the thesis permits registration at the beginning of the final semester. The choice of the thesis subject must be approved by the professor in charge of the student's field and recorded in the

Office of the Registrar by the date announced in the University calendar. Registration for the thesis is ordinarily made on the basis of 3 semester hours for two successive semesters. In exceptional cases, and with the approval of the professor in charge of the thesis, the student may register for the entire 6 hours during a single semester. The thesis in its final form must have the approval of the professor in charge of the student's field and must be presented to the Dean by the student no later than the date announced in the University calendar. Printed copies of detailed regulations regarding the form and reproduction of the thesis (see pages 55-56) are available in the Office of the Dean.

Payment of tuition for the thesis entitles the candidate, during the academic year of registration, to the advice and direction of the member of the faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year may be granted without further tuition payment. The student must, however, be registered in residence during this period. If the preparation of the thesis extends beyond the two-year period the student must register for it again, and pay tuition on the same basis as for a repeated course.

FINAL EXAMINATION

In addition to the course examinations, the candidate must pass a final examination on the thesis and its related fields. This examination may be either written or oral at the discretion of the Faculty.

If the thesis is submitted more than three years after the course requirements have been completed, a written examination covering the student's complete program of study will also be required.

THE SCHOOL OF EDUCATION

THE FACULTY AND STAFF OF INSTRUCTION*

James Harold Fox, A.M., Ed.D., *Dean of the School of Education*
Blake Smith Root, A.M., Ed.D., *Assistant Dean of the School of Education*

Ruth Harriet Atwell, A.M., *Professor of Physical Education for Women*
Mitchell Dreese, Ph.D., *Professor of Educational Psychology*
James Harold Fox, A.M., Ed.D., *Professor of Education*
Thelma Hunt, Ph.D., M.D., *Professor of Psychology*
Frances Kirkpatrick, A.M., *Professor of Home Economics*
William Henry Myers, A.M., *Professor of Physical Education for Men*
Burnice Herman Jarman, A.M., Ed.D., *Professor of Education*
Chester Elwood Leese, Ph.D., *Fry Professor of Physiology*
Helen Bennett Lawrence, A.M., *Professor of Physical Education for Women*

Blake Smith Root, A.M., Ed.D., *Professor of Education*
† Joseph Henry Krupa, M.S., Ed.D., *Professor of Physical Education for Men*

Calvin Weir Pettit, Ph.D., *Professor of Speech*
Kathryn Mildred Towne, A.M., *Professor of Home Economics*
‡ Elizabeth Burtner, A.M., *Professor of Physical Education for Women*
Anthony Charles LaBue, B.S., Ed.D., *Professor of Education*
Don Carlos Faith, Ph.D., *Professor of Educational Psychology*
Grover LaMarr Angel, A.M., Ed.D., *Professor of Education*
Ray LaForest Hamon, Ph.D., *Professorial Lecturer in Education*
John Frederick Brougher, A.M., Ed.D., *Professorial Lecturer in Education*

Madaline Kinter Remmlein, Ph.D., J.D., *Professorial Lecturer in Education*
Joseph Bueol Johnson, A.M., Ed.D., *Professorial Lecturer in Education*
Florence Mary Lumsden, A.M., Ed.D., *Professorial Lecturer in Education*

Howard Odin Johnson, A.M., Ed.D., *Professorial Lecturer in Education*
Anthony Marinaccio, Ph.D., *Professorial Lecturer in Education*

* The President of the University, the Dean of Faculties, the Dean and Assistant Dean of the School, the Registrar of the University, the Director of Admissions of the University, Professors, Associate Professors, and Assistant Professors constitute the Faculty.

† On sabbatical leave fall semester 1950-60.

‡ On sabbatical leave spring semester 1950-60.

- Clayton Hutchins, Ph.D., *Professorial Lecturer in Education*
 Kenneth Brown, Ph.D., *Professorial Lecturer in Education*
 John Holden, Ph.D., *Professorial Lecturer in Education*
 Charles Koelsche, M.S., Ed.D., *Professorial Lecturer in Education*
 Barnard DeJean Joy, A.M., Ed.D., *Professorial Lecturer in Education*
 Raymond George Hanken, B.S. in P.E., A.M. in Ed., *Associate Professor of Physical Education for Men*
 Mildred Hollander Shott, A.M., *Associate Professor of Secretarial Studies*
 Vincent James DeAngelis, B.S. in P.E., A.M. in Ed., *Associate Professor of Physical Education for Men*
 John Carl Lang, A.M., Ed.D., *Associate Professorial Lecturer in Education*
 LuVerne Crabtree Walker, A.M., *Associate Professorial Lecturer in Education*
 Raymond Ray Reed, A.M., *Associate Professorial Lecturer in Education*
 Eugenia Campbell Nowlin, A.M., *Associate Professorial Lecturer in Education*
 Gladys Gardner Jenkins, A.M., *Associate Professorial Lecturer in Education*
 Mary Ellen Coleman, A.M., *Associate Professor of Education: Director of the Reading Clinic*
 Eva Mayne Johnson, Ph.D., *Assistant Professor of Psychology*
 Carol Ruth St. Cvr, Ph.D., *Assistant Professor of Education*
 William Andrew McCauley, Ph.D., *Assistant Professor of Education*
 Harry Grubb Detwiler, A.M., *Assistant Professor of Education*
 Loretta May Stallings, A.M., *Assistant Professor of Physical Education for Women*
 Camille Jacob Craig, B.S. in P.E., A.M. in Ed., *Assistant Professor of Physical Education for Women*
 Robert Edward Baker, A.M., A.M. in Ed., *Assistant Professor of Education*
 Gay Ellen Cheney, B.S. in Ed., *Assistant Professor of Physical Education for Women*
 Levin Bartow Hanigan, B.S., Ed.D., *Lecturer in Education*
 Pat Abernethy, A.B., *Lecturer in Physical Education for Women*
 John Giancaspro, A.M. in Ed., *Lecturer in Education*
 Beverly Anderson Crump, B.S., Ed.M., *Lecturer in Education*
 Zella Mills Huse, A.M., *Lecturer in Education*
 James Whitley Suber, A.M., Ed.D., *Lecturer in Education*
 James Walter Tyler, A.M., Ed.D., *Lecturer in Education*
 Ward Whipple, A.M., *Lecturer in Education*
 Hazel Emma Wilson, A.M., *Lecturer in Education*
 William Dove Thompson, A.M., Ed.D., *Lecturer in Education*

FIELD STUDIES

Jerry Augbern Rice, Jr., M.S., *Director of Field Studies*

FIELD SERVICE COORDINATORS

Alexander Anderson, A.M., *Assistant Principal, Washington-Lee High School, Arlington, Virginia*

Mary Foust Maré, A.M., *Assistant Principal and Dean of Girls, Wakefield High School, Arlington, Virginia*

Claude Manby Richmond, B.S., A.M. in Ed., *Principal, Stratford Junior High School, Arlington, Virginia*

COMMITTEES*

THE DEAN'S COUNCIL†

1960

Elizabeth Burtner

Vincent James DeAngelis

1961

Frances Kirkpatrick

Harry Grubb Detwiler

1962

William Andrew McCauley

Robert Edward Baker

COMMITTEE ON GRADUATE STUDIES

The Dean of the School, *Chairman*

Mitchell Dreese

Burnice Herman Jarman

Blake Smith Root

Grover LaMarr Angel

William Andrew McCauley

Thelma Hunt

Don Carlos Faith

Anthony Charles LaBue

Carol Ruth St. Cyr

COMMITTEE ON ADMISSION AND ADVANCED STANDING

The Dean of the School, *Chairman*

Ruth Harriet Atwell

Frances Kirkpatrick

Harold Griffith Sutton

Blake Smith Root

Joseph Henry Krupa

COMMITTEE ON SCHOLARSHIP

Blake Smith Root, *Chairman*

Helen Bennett Lawrence

Kathryn Mildred Towne

Vincent James DeAngelis

* The Dean and Assistant Dean of the School of Education are members ex officio of all committees.

† Elected by the Faculty.

GENERAL INFORMATION

INTRODUCTORY

It is the purpose of the School of Education to prepare teachers, counselors, and administrators for the higher ranges of educational service and to offer opportunities to teachers of experience to extend their education. The School includes the departments of Education, Physical Education, and Home Economics. It offers both graduate and undergraduate work. Other departments of the University provide general education and subject-matter courses needed for a well-balanced program of teacher education.

The schedule of courses is arranged to meet the convenience of both full-time and part-time students. By attending evening, Saturday, and summer classes, teachers in the schools of the metropolitan Washington area and others within commuting range may complete all the requirements for a degree without giving up their positions.

REGULATIONS

Students in the School of Education are subject to, and are expected to familiarize themselves with, the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 13-29, and the University regulations stated on pages 50-58.

AMOUNT OF WORK

Fifteen to 17 semester hours of credit constitute a normal program. A student with a quality-point index of 3.00 or higher, may, with the permission of the Dean, enroll for 18 or 19 hours. No student may enroll for more than 19, except by permission of the Committee on Scholarship.

A student with extracurricular employment of 15 hours or less a week is permitted to carry a normal program of college work.

A student with extracurricular employment of from 16 to 25 hours a week may enroll for 12 or 13 hours. Such a student with a quality-point index of 3.00 or higher may, with special permission of the Dean, enroll for 15 or 16 hours.

A student with extracurricular employment of from 26 to 34 hours a week may enroll for 9 or 10 semester hours. Such a student with a quality-point index of 3.00 or higher may, with special permission of the Dean, enroll for 12 or 13 hours.

A student with extracurricular employment of 35 hours or more a week may enroll for 6 or 7 hours. Such a student with a quality-point index of 3.00 or higher may, with special permission of the Dean, enroll for 9 or 10 hours.

A student who increases his hours of employment subsequent to registration or at any time during a semester is required to report that fact immediately to the Dean so that his program may be brought within the limitations outlined above.

THE BACHELOR'S DEGREES

Upon the satisfactory completion of the undergraduate requirements of the School of Education, the degree of Bachelor of Arts in Education, Bachelor of Science in Home Economics, or Bachelor of Science in Physical Education is conferred.

The program of work of each student must be approved by a Faculty adviser. Since each student's program of work will be defined by his particular needs, it is important that the student have a clear concept of his major interest in education, and also that he be familiar with the teaching-certificate requirements in the locality in which he expects to teach.

REQUIREMENTS FOR THE DEGREES

To be recommended for a degree a student must satisfy the admission, residence, scholarship, and curriculum requirements.

RESIDENCE

Candidates for the Bachelor's degrees must complete satisfactorily while matriculated in the School of Education a minimum of 30 semester hours, 9 of which, with the approval of the adviser, may be in the Off-Campus Division of the College of General Studies.

For full details concerning registration, see pages 54-55.

SCHOLARSHIP

The system of grading and of computing scholarship is described in detail on pages 50 and 51.

In order to graduate, a student must have a quality-point index of at least 2.00.

Probation.—An undergraduate student who fails to maintain a quality-point index of at least 2.00 will be placed on probation. A student remains on probation as long as his quality-point index is below 2.00, or until his probation is removed by the Committee on Scholarship.

Suspension.—An undergraduate student on probation who fails to raise his quality-point index to 2.00 within the time specified by the Committee on Scholarship may be suspended. An undergraduate student who fails to make passing grades in one-half or more of a minimum of 16 semester hours of course work may be suspended.

A student who has been suspended for poor scholarship may within ten days appeal his case to the Committee on Scholarship through the Dean. If the case appears to be remediable and the student appears likely to improve in his scholarship thereafter, the Committee may readmit him on probation. A student who has been denied readmission on probation may petition the Committee on Scholarship through the Dean for readmission after a lapse of a calendar year. A student who has been suspended twice will not be readmitted.

CURRICULUM REQUIREMENTS

In any of the following curricula at least 30 semester hours must consist of courses numbered above 100.

Bachelor of Arts in Education

Programs leading to the degree of Bachelor of Arts in Education have four main objectives: (1) provision of general educational backgrounds, (2) a functional command of ideas, concepts, knowledges, and skills in one or more teaching fields, (3) a mastery of basic professional information and skills adequate for a beginning teacher, and (4) development of attitudes needed for success in teaching. Since the contents of teaching fields differ in scope and complexity, some programs are longer than others in terms of semester hours. None require less than 126 hours of satisfactory work, exclusive of required Physical Education.

Normally, from 60 to 64 semester hours of the total requirement are completed in the Junior College of the University or in an equivalent institution elsewhere. (See "Education," pages 72-73.)

The general educational backgrounds needed by prospective teachers are obtained through: (1) precollege education, (2) college courses, (3) work experience, (4) leadership activities, (5) participation in student campus activities, and (6) utilization of off-campus cultural opportunities.

Teaching-field requirements include satisfactory completion of prescribed academic courses in one or more fields, a satisfactory score on the special field examination of the National Teacher Examinations, and satisfactory completion of the prescribed special methods courses. Programs of study are available in the following fields: art, biology, business education, chemistry, elementary education, English, French, general science, geography, German, history, mathematics, physics, social studies, Spanish, and speech.

Those preparing to teach on the secondary level are required to complete the prescribed courses in a minor as well as a major field. Students preparing to teach on the elementary level are advised to use free electives to increase their mastery of content in an academic field.

Prescribed Courses in the Various Teaching Fields*

ART

	Semester Hours
Six semester hours from the following.....	6
Art 1: Art Appreciation	
Art 31-32: Survey of Art	
Art 71-72: Introduction to the Arts in America	
Art 101: Ancient Art	
Art 102: Medieval Art	
Art 100: Nineteenth Century Art in Europe	
Art 110: Contemporary Art	
Art 205: Baroque Art in Italy	
Six semester hours from the following.....	6
Art 105: Renaissance Art in Italy	
Art 106: Renaissance Art in the North	
Art 203: Primitive Art	
Art 204: Art of the Far East	
Art 210: Christian Iconography	
Twenty-four semester hours from the following.....	24
Art 21-22: Basic Design	
Art 45-46: Drawing and Painting I—Life and Still Life	
Art 65-66: Drawing and Painting I—Life, Still Life, and Portrait	
Art 67-68: Drawing and Painting I—Life and Portrait	
Art 81-82: Sculpture I	
Art 125-26: Drawing and Painting II—Life, Still Life, and Portrait	
Art 127-28: Drawing and Painting II—Life and Portrait	
Art 165-66: Drawing and Painting II—Life and Portrait	
Art 179-80: Sculpture II	
Art 183-84: Commercial Art	
Total.....	36

BIOLOGY

Biology 1-2: Survey in Biology.....	6
Botany 1-2: General Botany.....	6
Home Economics 152: Nutrition.....	3
Physiology 115: Physiology.....	3
Zoology 1-2: Introduction to Zoology.....	8
*Additional courses, as approved by the adviser.....	9
Total.....	35

BUSINESS EDUCATION

Accounting 1: Introductory Accounting.....	3
Economics 1-2: Principles of Economics.....	6
Secretarial Studies 51: Business Correspondence.....	3
Additional courses, as prescribed, in one of the following groups:	
Group 1—Secretarial Studies†	
Secretarial Studies 2: Intermediate Typewriting.....	3

* Not required for the minor.

† Candidates inadequately prepared for Secretarial Studies 8 or 13 may be required to take Secretarial Studies 1 or 11.

	Semester Hours
Secretarial Studies 12: Intermediate Shorthand and Transcription	3
Secretarial Studies 15: Advanced Shorthand, Typewriting, and Transcription	3
Secretarial Studies 16: Secretarial Shorthand, Typewriting, and Transcription	3
Secretarial Studies 54: Secretarial Practice	3
• Additional courses from the following, as approved by the adviser	6
Accounting 2: Introductory Accounting	
Business Administration 101: Business Organization and Combination	
Business Administration 109: Office Management	
Business Administration 141: Principles of Marketing	
Business Administration 151: Retail Store Management	
Business Administration 161: Commercial Law: Contracts, Sales, Agency, and Bailments	
Economics 121: Money and Banking	
Statistics 52: Mathematics of Finance	
Total	33
Group 2—Bookkeeping, Business Arithmetic, and Business Law	
Accounting 2: Introductory Accounting	3
Business Administration 101: Business Organization and Combination	3
Business Administration 102: Business Management	3
Business Administration 161: Commercial Law: Contracts, Sales, Agency, and Bailments	3
Business Administration 162: Commercial Law: Negotiable Instruments, Property, Mortgages	3
Statistics 52: Mathematics of Finance	3
• Six semester hours from the following, as approved by the adviser	6
Accounting 111: Financial Statement Analysis	
Business Administration 121: General Insurance	
Business Administration 131: Business Finance	
Business Administration 138: Investments	
Economics 121: Money and Banking	
Total	36
Group 3—Distributive Education	
Business Administration 141: Principles of Marketing	3
Business Administration 143: Marketing Management Problems	3
Business Administration 145: Sales Management	3
Business Administration 151: Retail Store Management	3
• Twelve semester hours from the following, as approved by the adviser	12
Business Administration 147: Advertising	
Business Administration 150: Procurement and Materials Management	
Business Administration 158: Traffic Management	
Business Administration 175: Introduction to Foreign Trade	
Business Administration 176: Exporting and Importing	
Total	36

* Not required for the minor.

CHEMISTRY

	Semester Hours
Chemistry 11-12: General Chemistry.....	8
Chemistry 21: Qualitative Inorganic Analysis.....	4
Chemistry 22: Quantitative Inorganic Analysis I.....	4
Chemistry 151-52: Organic Chemistry.....	8
Chemistry 191: History of Chemistry.....	2
Mathematics 3: College Algebra.....	3
Mathematics 6: Plane Trigonometry.....	3
Mathematics 12: Analytic Geometry.....	3
Physics 11, 12, 13: General Physics.....	9
Total.....	44

ELEMENTARY EDUCATION

Education 113: Elementary School Art.....	3
Education 114: Elementary School Music.....	3
Geography 51, 52: Introduction to Geography; World Regions.....	6
History 71-72: Development of the Civilization of the United States.....	6
Mathematics 2: General Mathematics.....	3
Physical Education 101: Physical Education in Elementary School....	3
Science, as approved by adviser.....	6-8
Six semester hours from the following, as approved by the adviser....	6
Economics 1-2: Principles of Economics	
History 39-40: Development of European Civilization	
Political Science 9-10: Government of the United States	
Religion 59-60: History of Religion	
Sociology and Anthropology 1-2: Man in Modern Society	
Total.....	36-38

ENGLISH

English 1, 2: English Composition.....	6
English 52: Introduction to English Literature.....	3
English 71-72: Introduction to American Literature.....	6
English 125: Introduction to English Linguistics.....	3
English 135-36: Shakespeare.....	6
Speech 11: Voice and Diction.....	3
*Nine semester hours from the following, as approved by the adviser...	9
English 151-52: The Romantic Movement	
English 161-62: Victorian Literature	
English 165-66: The Twentieth Century	
English 171-72: Studies in American Literature	
English 173-74: Major American Poets	
English 176: American Drama	
English 177-78: American Fiction	
English 182: The English Novel	
English 199: Proseminar	
Total.....	36

* Not required for the minor.

FRENCH

	Semester Hours
French 1-2: First-year French.....	6
French 3-4: Second-year French.....	6
French 9-10: French Conversation and Composition.....	6
French 51-52: Survey of French Literature and Civilization.....	6
*Additional courses in French, as approved by the adviser.....	12
Total.....	36

GENERAL SCIENCE†

Chemistry 11-12: General Chemistry.....	9
Chemistry 21: Qualitative Inorganic Analysis.....	4
Physics 11, 12, 13, 16: General Physics.....	12
Nine semester hours from the following.....	9
Mathematics 3: College Algebra	
Mathematics 6: Plane Trigonometry	
Mathematics 12: Analytic Geometry	
Mathematics 29, 30, 31: Calculus I, II, III	
One of the following.....	6-8
Biology 1-2: Survey in Biology	
Botany 1-2: General Botany	
Zoology 1-2: Introduction to Zoology	
Total.....	39-41

GEOGRAPHY

Geography 51: Introduction to Geography.....	3
Geography 52: World Regions.....	4
Geography 103-11: Cartography.....	6
Geography 115-16: Physical Geography.....	6
Geography 141-42: Urban Settlement.....	6
*Six semester hours from the following.....	
Geography 183: Western Europe	
Geography 184: The Mediterranean	
Geography 191: Latin America	
Geography 195: Eastern and Southeastern Asia	
Geography 197: The Pacific	
Geography 198: Australia	6
*Six semester hours from the following.....	
Geography 125: Transportation Complexes	
Geography 126: World Food Production	
Geography 133: Regional Industrial Structures	
Geography 134: Location of Industry	
Geography 145: World Cultural Geography	
Geography 146: World Political Geography	
Total.....	36

* Not required for the minor.

† May not be chosen as a minor field.

GERMAN

	Semester Hours
German 1-2: First-year German.....	6
German 3-4: Second-year German.....	6
German 9-10: German Conversation and Composition.....	6
German 51-52: Introduction to German Literature.....	6
*Additional courses in German, as approved by the adviser.....	12
Total.....	36

HISTORY

History 39-40: The Development of European Civilization.....	6
History 71-72: The Development of the Civilization of the United States.....	6
Six semester hours from each of the following groups, as approved by the adviser.....	18
Group 1—American History	
History 171-72: Social History of the United States	
History 173: Representative Americans	
History 174: Economic History of the United States	
History 181-82: Diplomatic History of the United States	
Group 2—European History	
History 109: Thought and Culture of the Western World I: Ancient Civilization	
History 110: Thought and Culture of the Western World II: The Middle Ages and Renaissance	
History 130: Nationalism	
History 145-46: Russian History	
History 147: Economic History of Europe	
History 149-50: European Diplomatic History	
History 151-52: English History	
*Group 3—Latin American History	
History 163: Colonial Latin America	
History 164: South America since Independence	
History 166: Mexico and the Caribbean since Independence	
Political Science 178: Recent Trends in Latin American Politics and Government	
Political Science 178: International Politics in the Western Hemisphere	
*Additional semester hours from one of the foregoing groups, as approved by the adviser.....	6
Total.....	36

HOME ECONOMICS

Home Economics 1: Food Selection and Preparation.....	3
Home Economics 22: Clothing: Its Selection, Cost, and Care.....	3
Home Economics 51: Family Meals.....	3
Home Economics 53: Family Health and Household Sanitation.....	3
Home Economics 62: Clothing Construction.....	3
Home Economics 102: Advanced Food Preparation.....	3

* Not required for the minor.

	Semester Hours
Home Economics 123: Household Finance and Problems of the Consumer	3
Home Economics 143: Advanced Clothing Construction	3
Home Economics 152: Nutrition	3
Home Economics 171: House Furnishing	3
Home Economics 181: The Child in the Home	3
Home Economics 192: The Home, Its Management and Equipment ..	3
Physiology 115: Physiology	3
Total	30

MATHEMATICS

Mathematics 3: College Algebra	3
Mathematics 6: Plane Trigonometry	3
Mathematics 12: Analytic Geometry	3
Mathematics 29, 30, 31: Calculus I, II, III	9
• Mathematics 102: Fundamental Concepts of Mathematics (or an alternative approved by the adviser)	3
• Mathematics 123: Theory of Equations, or	
• Mathematics 125: Advanced Algebra	3
• Mathematics 132: Differential Equations, or	
• Mathematics 139: Advanced Calculus	3
• An additional course in Mathematics, as approved by the adviser ..	3
Total	30

PHYSICS

Physics 11: Introductory Physics	3
Physics 14, 15, and 16: General Physics	9
Physics 55: Physical Measurements	3
Physics 101: Mechanics	3
Physics 105: Principles of Electricity	3
Physics 106: Optics	3
• Chemistry Elective—Chemistry 11–12: General Chemistry or	
Chemistry 12 and 21: General Chemistry and Qualitative Inorganic	
Analysis	6
Mathematics 12: Analytic Geometry	3
Mathematics 29, 30, 31: Calculus I, II, III	9
• Six semester hours from the following	6
Physics 102: Heat and Thermodynamics	
Physics 113: Atomic Physics	
Physics 114: Statistical Physics	
Physics 128: Sound	
Physics 132: Electronics	
Physics 155: Advanced Laboratory in Electricity and Magnetism	
Physics 156: Advanced Laboratory in Optics	
Total	60

• Not required for the minor.

RUSSIAN*

	Semester Hours
Russian 1-2: Elementary Russian.....	6
Russian 3-4: Intermediate Russian.....	6
Russian 9-10: Conversational Russian.....	6
Russian 101-2: Rapid Readings and Translations.....	6
Total.....	24

SOCIAL STUDIES

History 39-40: The Development of European Civilization.....	6
History 71-72: The Development of the Civilization of the United States.....	6
Political Science 9-10: Government of the United States.....	6
Twelve semester hours from the following.....	12
Economics 1-2: Principles of Economics	
Geography 51, 52: Introduction to Geography; World Regions	
Religion 59-60: History of Religion	
Sociology and Anthropology 1-2: Man in Modern Society	
†Additional second-group courses, as approved by the adviser, from one of the following fields: Economics, Geography, History, Political Science, Religion, Sociology and Anthropology.....	12
Total.....	42

SPANISH

Spanish 1-2: First-year Spanish.....	6
Spanish 3-4: Second-year Spanish.....	6
Spanish 9-10: Spanish Conversation and Composition.....	6
†Additional courses, as approved by the adviser.....	18
Total.....	36

SPEECH

Speech 1: Effective Speaking.....	3
Speech 2: Persuasive Speaking.....	3
Speech 11: Voice and Diction.....	3
Speech 32: Oral Reading.....	3
Speech 101: Voice and Phonetics.....	3
Speech 121: Group Discussion and Conference Leadership.....	3
Speech 153: Acting.....	3
Speech 175: Speech Correction.....	3
One of the following areas of specialization, as approved by the adviser:	
†Group 1—Speech Arts	
Twelve semester hours from the following.....	12
Speech 102: Oral Interpretation of Literature	
Speech 126: Public Discussion and Debate	

* May be chosen as a minor field only.
† Not required for the minor.

Speech 154:	Play Production	
Speech 166:	History of the Theater	
Speech 169:	Creative Dramatics and Children's Theater	
*Group 2—Speech Correction		
Twelve semester hours from the following		12
Speech 176:	Speech Correction	
Speech 177-78:	Clinical Practice in Speech Therapy	
Speech 182:	Hearing Problems and the Testing of Hearing	
Speech 183-84:	Clinical Practice in Hearing Therapy	
Speech 191:	Proseminar: Speech Correction	
Additional courses in English, Physiology, Psychology, or Speech,		
as approved by the adviser		

Total..... 30

Professional Education

The basic professional information, skills, and attitudes needed by beginning teachers are provided through a sequence of courses to be taken in the junior and senior years. Lectures and class discussions are closely coordinated with field work. Instruction is differentiated to meet the needs of those preparing to teach on the various levels—elementary school, junior high school, senior high school, and adult.

PROFESSIONAL COURSES—SECONDARY

Education 109-10:	Human Development, Learning, and Teaching...	6
Education 121-22:	Society and the School.....	3
Education 131:	Common Teaching Skills in Secondary Schools...	3
Education 133-34:	Observation and Student Teaching in Secondary Schools	6-9
Three to six semester hours from the following Special Methods courses		3-6
Education 136:	Teaching English	
Education 138:	Teaching Social Studies	
Education 140:	Teaching Mathematics	
Education 144:	Teaching Science	
Education 146:	Teaching Foreign Languages	
Education 148:	Teaching Home Economics	
Education 150:	Teaching Business Subjects	

Total..... 24-30

PROFESSIONAL COURSES—ELEMENTARY

Education 109-10:	Human Development, Learning, and Teaching...	6-12
Education 111:	Methods in Elementary Education.....	3
Education 112:	Guidance in Elementary Schools.....	3
Education 121-22:	Society and the School.....	3
Education 135:	Student Teaching in Elementary Schools.....	6

Total.....

* Not required for the minor.

Bachelor of Science in Home Economics

The curriculum leading to this degree is designed to prepare young women for the important responsibility of home-making. The program can be adapted, however, to meet special requirements in nutrition, dietetics, clothing, and other related fields. Each student must plan her work with the assistance of a faculty adviser in the Department of Home Economics.

GENERAL HOME-MAKING

JUNIOR YEAR		Semester Hours	SENIOR YEAR		Semester Hours
Home Economics 51.....	3		Home Economics 152.....	3	
Home Economics 72.....	3		Home Economics 171.....	3	
Home Economics 102.....	3		Home Economics 181.....	3	
Home Economics 123.....	3		Home Economics 192.....	3	
Physiology 115.....	3		Home Economics 197-98.....	6	
Elective	15		Elective	12	
Total.....	30		Total.....	30	

Bachelor of Science in Physical Education for Men

There are three curricula leading to this degree. The Single-Major and Subject-Certification Teacher's Curriculum is designed to prepare students for teaching positions in smaller schools where it is necessary to teach an academic subject in addition to physical education. The Single-Major Teacher's Curriculum prepares for the teaching of physical education in the larger schools. The Physical Education and Recreation Curriculum has been planned for those who wish to be prepared to direct programs of recreation in addition to the teaching of physical education.

The minimum requirements for this degree are 66 semester hours, distributed as follows:

SINGLE-MAJOR AND SUBJECT-CERTIFICATION TEACHER'S CURRICULUM

The minimum requirements for this degree are 21 semester hours in education, 24 hours in physical education, 18 hours in an academic teaching field, and 3 hours in physiology, distributed as follows:

JUNIOR YEAR		Semester Hours	SENIOR YEAR		Semester Hours
Education 109-10.....	6		Education 111.....	3	
Education 121-22.....	6		Education 131-34.....	6	
Physical Education 103.....	3		Physical Education 115-16.....	4	
Physical Education 105.....	3		Physical Education 122.....	3	
Physical Education 107.....	1		Physical Education 131.....	3	
Physical Education 113-14.....	4		Physical Education 148.....	3	
Physiology 115.....	3		Academic teaching field.....	11	
Academic teaching field.....	7				
Total.....	33		Total.....	33	

SINGLE-MAJOR TEACHER'S CURRICULUM

The minimum requirements for this degree are 21 semester hours in education, 28 hours in physical education, 3 hours in physiology, and 14 hours of electives:

JUNIOR YEAR		Semester Hours	SENIOR YEAR		Semester Hours
Education 109-10.....	6		Education 131.....	3	
Education 121-22.....	6		Education 133-34.....	6	
Physical Education 103.....	3		Physical Education 105.....	3	
Physical Education 107.....	1		Physical Education 122.....	3	
Physical Education 109-10.....	4		Physical Education 131.....	3	
Physical Education 113-14.....	4		Physical Education 138.....	3	
Physical Education 115-16.....	4		Elective	12	
Physiology 115.....	3				
Elective	2		Total.....	33	
Total.....	33				

PHYSICAL EDUCATION AND RECREATION CURRICULUM

The minimum requirements for this curriculum are 66 semester hours, distributed as follows:

JUNIOR YEAR		Semester Hours	SENIOR YEAR		Semester Hours
Education 109.....	3		Education 131.....	3	
Education 121-22.....	6		Education 133-34.....	3	
Physical Education 48.....	2		Physical Education 103.....	3	
Physical Education 107.....	1		Physical Education 122.....	3	
Physical Education 109-10.....	4		Physical Education 131.....	3	
Physical Education 113-14.....	4		Physical Education 138.....	3	
Physical Education 132.....	1		Physical Education 161.....	3	
Physical Education 151-52.....	6		Physical Education 162.....	3	
Elective	6		Elective	3	
Total.....	33		Total.....	33	

Bachelor of Science in Physical Education for Women

There are three curricula leading to this degree. The Dual-Major Teacher's Curriculum is designed to prepare students for teaching positions in smaller schools where it is necessary to teach an academic subject in addition to physical education. The Single-Major Teacher's Curriculum prepares for the teaching of physical education in the larger schools. Within this curriculum there is opportunity for specialization in dance, sports, or correctives. The Physical Education and Recreation Curriculum has been planned for those who wish to be prepared to direct programs of recreation in addition to teaching physical education.

The minimum requirements for this degree are 66 semester hours distributed as follows:

DUAL- OR SINGLE-MAJOR TEACHER'S CURRICULUM

The student desiring to prepare herself to teach another subject in addition to Physical Education for Women may do so by choosing her elective hours from one subject-matter field with the advice of the Dean of the School of Education. Relevant work completed in the Junior College may be counted in this subject-matter field.

JUNIOR YEAR		Semester Hours	SENIOR YEAR		Semester Hours
Education	109-10	6	Education	121-22	6
Physical Education	101	3	Education	133-34	6
Physical Education	103	3	Physical Education	113-14	4
Physical Education	105-6	6	Physical Education	122	3
Physical Education	107	1	Physical Education	131	3
Physical Education	111-12	4	Physical Education	138	3
Physical Education	117	1	Elective		9
Physical Education	118	1			
Physical Education	132	1			
Physiology	115	3			
Elective		3			
Total		32	Total		34

PHYSICAL EDUCATION AND RECREATION CURRICULUM

JUNIOR YEAR		Semester Hours	SENIOR YEAR		Semester Hours
Physical Education	48	2	Education	121-22	6
Physical Education	101	3	Education	133-34	6
Physical Education	105-6	6	Physical Education	103	3
Physical Education	109-10	4	Physical Education	107	1
Physical Education	111-12	4	Physical Education	113-14	4
Physical Education	117	1	Physical Education	122	3
Physical Education	118	1	Physical Education	132	1
Physical Education	151-52	6	Physical Education	138	3
Physiology	115	3	Physical Education	161	3
Elective		3	Physical Education	162	3
Total		33	Total		33

THE DEGREE OF MASTER OF ARTS IN EDUCATION

Upon the satisfactory completion of the graduate requirements of the School of Education, the degree of Master of Arts in Education is conferred. This is a professional degree, designed to prepare the student for some particular type of educational service. The program of studies leading to the degree is selected by the candidate and his adviser from the various related departments of the University to give the student an adequate background in his chosen vocational field. For the prospective high school or junior high school teacher this will ordinarily include study in the subject which he is planning to teach as well as in the field of education.

In accordance with the foregoing general pattern of work, graduate programs of study are available in the following fields: (1) school administration—secondary school principalship or elementary school principalship; (2) adult education; (3) secondary education—senior or junior high school; (4) elementary education; (5) comparative education; (6) curriculum; (7) employee training; (8) guidance; (9) philosophy and history of education; (10) reading; (11) Teacher Education. Programs of work for teachers-in-service are differentiated from those for students without teaching experience. Additional information concerning these programs may be obtained by writing to the Dean.

ADMISSION TO CANDIDACY

The requirements for admission to candidacy for the Master's degree are stated on page 22. Those wishing to prepare for careers in guidance or administration must have had at least two years of successful teaching experience. Candidates who have had no professional courses must satisfactorily complete the required undergraduate professional courses including Observation and Student Teaching, in addition to graduate course requirements.

ADVANCED STANDING

Graduate work completed in other accredited institutions of learning may be credited toward the Master's degree, but a minimum of 30 semester hours must be completed at The George Washington University as a matriculated candidate for the degree in the School of Education.

Advanced courses completed in this University in excess of the requirements for the Bachelor's degree may be credited toward the Master's degree to the extent of 12 semester hours, provided the work fits in with the student's plan of specialization and is approved in writing by the Dean before being undertaken.

In determining advanced standing at the time of admission or readmission to Master's candidacy at this University, graduate work completed more than three years previously is not counted.

REQUIREMENTS FOR THE DEGREE

PLANS OF STUDY

Two plans of study lead to the degree of Master of Arts. *Plan 1* requires a minimum of 30 hours of graduate credit, including a thesis carrying 6 hours of graduate credit. *Plan 2* requires a minimum of 36 hours of graduate credit, including the course in *Educational Research Methods and Procedures* carrying 3 hours of graduate credit.

SELECTION OF COURSES

Programs of study under *Plan 1* must include a minimum of 12 semester hours from third-group courses in addition to the thesis. Under *Plan 2* a minimum of 18 hours, in addition to the course in *Educational Research Methods and Procedures*, must be from third-group courses.

Programs of study must include a minimum of 12 hours selected from courses offered in the Department of Education.

When programs of study include additional academic preparation in one or more teaching fields, undergraduate and graduate courses combined must be at least equivalent to the undergraduate requirements of the Bachelor of Arts degree in the teaching field concerned.

RESIDENCE

Candidates for the degree of Master of Arts in Education must complete satisfactorily at this University a minimum of 30 semester hours, 9 of which, with the approval of the adviser, may be in the Off-Campus Division of the College of General Studies.

THE THESIS

The thesis required under *Plan 1*, must conform to standards prescribed. A statement of these standards may be obtained at the Office of the Dean.

The thesis subject must be approved in writing by the candidate's adviser and recorded in the Office of the Registrar by the date announced in the University calendar. The thesis in its final form must be presented to the Dean by the candidate no later than the date announced in the University calendar. Printed copies of detailed regulations regarding the form and reproduction of the thesis (see pages 55-56) are available in the Office of the Dean.

Payment of tuition for the thesis will entitle the candidate, during the academic year of registration, to the advice and direction of the member of the Faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year may be granted without further tuition payment. The student must, however, be registered in residence during this period. If the preparation of the thesis extends beyond the two-year period it must be registered for again and tuition paid on the same basis as for a repeated course.

COMPREHENSIVE EXAMINATION

In addition to the course examinations, the candidate must pass a professional comprehensive examination in two parts: (1) a general examination concerned with an integrated understanding of the major areas

in professional education, and (2) a special examination concerned with the candidate's area of specialization.

The general part of the comprehensive examination is divided into three groups as follows: Group I (Foundations) covers learning and teaching, society and the school, child and adolescent growth and development, history of education, philosophy of education, and educational research; Group II (Major Levels) covers elementary education, secondary education, adult education, employee training, and physical education; Group III (Common Elements) covers administration, curriculum, evaluation, guidance, methodology, and reading.

The candidate must be prepared to answer two questions in each group, none of which shall be concerned with his area of specialization.

FIVE-YEAR PROGRAM

A candidate entering the School of Education from the Junior College (or with equivalent preparation) may choose a three-year program leading to the degrees of Bachelor of Arts and Master of Arts in Education to be conferred simultaneously. The first year of this combined program will be devoted to teaching-field preparation; the work of the second year will include the Bachelor of Arts junior-year professional courses and a maximum of 18 semester hours of graduate courses; that of the third and final year, senior-year undergraduate professional courses and the remaining graduate courses needed for the Master's degree. Observation and Student Teaching to be elected in the third year may not be taken for graduate credit. A quality-point index of at least 2.50 in undergraduate courses must be attained before beginning the work of the senior year and the program must meet all the requirements for the degrees of Bachelor of Arts and Master of Arts in Education.

THE ADVANCED PROFESSIONAL CERTIFICATE

Upon the satisfactory completion of the program of advanced graduate studies of the School of Education, the Advanced Professional Certificate is granted. This program is designed to prepare teachers and administrators for more effective service in their chosen fields and to enable them to qualify for a higher step in the local salary scale.

The program of studies leading to the Certificate is selected by the candidate and his adviser from the various related departments of the University in accordance with the student's needs. In general it includes 30 hours of graduate credit beyond the Master's degree. The candidate wishing to increase his teaching proficiency may include additional study in his teaching field. For information concerning available programs see the separate catalogue of the School of Education.

ADMISSION TO CANDIDACY

The requirements for admission to candidacy for the Advanced Professional Certificate are stated on page 22. The applicant who is unable to meet the admission requirements may be admitted with deficiencies to be met by satisfactorily completing prerequisites in addition to the specified program of graduate study. Each applicant must be interviewed by a member of the Faculty of the School of Education. The applicant seeking to qualify for a higher level in the local salary scale must have his program approved by the appropriate representative of the school system employing him.

TRANSFER OF CREDIT

Appropriate graduate work completed in other accredited higher institutions may be credited toward the requirements for the Certificate, but a minimum of 18 semester hours must be completed at The George Washington University as a matriculated candidate in the School of Education. The candidate is encouraged to include in his program study at other accredited higher institutions when such study seems to be in his best interest. In determining advanced standing at the time of admission or readmission to Certificate candidacy, graduate work completed more than three years previously is not counted.

REQUIREMENTS FOR THE CERTIFICATE

Plans of Study

In planning his program of studies the candidate should give first consideration to his particular needs. If he is a teacher and his graduate study leading to the Master's degree was largely in professional education, he may find it desirable to emphasize additional mastery of his teaching field. If his Master's preparation was in a content field, he may wish to devote a major part of his program to additional professional study. Those in administration and related services may wish to continue specialization on a more advanced level.

The program of study must include, in addition to any prerequisites, a minimum of 30 hours of graduate credit in third-group courses and not less than 12 hours in courses offered by the School of Education.

RESIDENCE

Candidates for the Advanced Professional Certificate must complete satisfactorily at this University a minimum of 18 semester hours in courses offered on the campus. The balance of the program may be in the Off-Campus Division of the College of General Studies or in other approved institutions of higher learning. The candidate is not required

to pursue his program of study continuously. On request, a leave of absence is granted to the candidate for a period not to exceed three years.

THE DEGREE OF DOCTOR OF EDUCATION

The requirements for the degree of Doctor of Education cannot be stated in semester hours, but they consist in general of at least two full years of work beyond the degree of Master of Arts in Education or the equivalent. The programs of study are designed to prepare students for administrative or supervisory positions, the teaching of education in normal schools or colleges, the teaching of an academic subject in schools or colleges, or for specialized types of educational service. The work is given a practical rather than a theoretical bent, and emphasizes the mastery and application of subject matter, both in the study requirements and in the dissertation. Special emphasis is placed upon the professional success of the candidate.

The candidate's program of study depends for the most part upon his previous educational background and his professional objective. Opportunities are provided for study leading to the following professional objectives: school superintendent, secondary school principal, elementary school principal, supervisor, director of guidance, director of curriculum development, professor of education, and specialist in educational research.

QUALIFICATIONS OF THE APPLICANT

The candidate for the degree of Doctor of Education must have completed (1) graduate work in fields prerequisite to his objective, equivalent to that required for the degree of Master of Arts in Education at The George Washington University, and (2) at least three years of successful educational experience.

ADMISSION TO CANDIDACY

To be admitted to candidacy for the degree the applicant must be accepted by the Committee on Graduate Studies on the basis of an examination which will usually include the following: (1) a written examination involving problems related to the applicant's background; (2) a scholastic-aptitude test; (3) an oral examination.

CONSULTATIVE COMMITTEE

If the applicant is accepted as a candidate, his consultative committee in cooperation with the candidate, will (1) determine the fields of study in each of which the candidate must pass a written examination at least eight months before he presents himself for the degree; (2) formulate

a list of course requirements and of readings that will assist him in preparing for these examinations; and (3) designate the tools of investigation that will be needed by the candidate in the prosecution of his study. These tools may include one foreign language or more, statistical methods, historical criticism, or any others considered essential by the committee. An examination in the tools designated must be passed by the candidate before he takes his final comprehensive examination.

THE DISSERTATION

When the candidate has satisfied the requirements of his consultative committee, the committee is dissolved. A member of the Faculty, in whose field the topic of the dissertation falls, is then appointed to serve as the candidate's adviser on his dissertation and in his field of specialization, and to recommend him to the Dean for the final oral examination when, in his judgment, the candidate's dissertation is acceptable.

No later than the date specified in the University calendar the candidate must submit to the Dean three complete copies of the dissertation together with a fourth copy of the summary. Printed copies of detailed regulations regarding the form and reproduction of the dissertation and its summary (see pages 55-56) are available in the Office of the Dean. The summaries of accepted dissertations will be printed in a numbered issue of the University BULLETIN. The successful candidate for the doctorate is required, before receiving his degree, to pay a fee to cover the expense of printing the summary of the dissertation.

THE FINAL EXAMINATION

At least three weeks before the degree is to be conferred the candidate must pass an oral examination on his dissertation and on his field of specialization before a committee of the Faculty appointed by the Dean and supplemented by two experts from outside the University. This examination is open to the public and all are privileged to question the candidate. The Dean, or a member of the Faculty designated by him, will preside at this examination.

THE SCHOOL OF GOVERNMENT

THE FACULTY AND STAFF OF INSTRUCTION*

Archibald Mulford Woodruff, Ph.D., *Dean of the School of Government*
Joe Lee Jessup, M.B.A., *Assistant Dean in the School of Government*

Richard Norman Owens, Ph.D., C.P.A., *Professor of Business Administration*

Elmer Louis Kayser, Ph.D., LL.D., *Professor of European History*

Warren Reed West, Ph.D., *Professor of Political Science*

Harold Griffith Sutton, M.S., *Professor of Finance*

Mitchell Dreese, Ph.D., *Professor of Educational Psychology*

Ralph Dale Kennedy, Ph.D., *Professor of Accounting*

Wood Gray, Ph.D., *Professor of American History*

Thelma Hunt, Ph.D., M.D., *Professor of Psychology*

Arthur Edward Burns, Ph.D., *Professor of Economics*

John Withrow Brewer, Ph.D., *Professor of International Law*

Harold Loran Geisert, Ph.D., *Professor of Sociology and Anthropology*

Howard Maxwell Merriman, Ph.D., *Professor of American Diplomatic History*

Donald Stevenson Watson, Ph.D., *Professor of Economics*

Arlin Rex Johnson, Ph.D., *Professor of Business Administration*

Everett Herschel Johnson, Ph.D., *Professor of Statistics*

Joe Lee Jessup, M.B.A., *Professor of Business Administration*

Robert Dale Campbell, Ph.D., *Professor of Geography*

†Roderic Hollett Davison, Ph.D., *Professor of European History*

Wolfgang Herbert Kraus, Dr. Jur., S.J.D., *Professor of Political Science*

James Carlton Dockeray, Ph.D., *Professor of Finance*

David Springer Brown, Ph.D., *Professor of Public Administration*

Thomas Willard Holland, LL.B., Ph.D., *Professor of Labor Economics*

Harold Frederick Bright, Ph.D., *Professor of Statistics*

Archibald Mulford Woodruff, Ph.D., *Professor of Business Research*

Wolfram Karl Legner, Ph.D., *Professor of German*

Don Carlos Faith, Ph.D., *Professor of Educational Psychology*

Henry Furness Hubbard, Ph.D., *Professorial Lecturer in Psychology*

Gerhard Colm, Dr. rer. pol., *Professorial Lecturer in Economics*

Orton Wells Boyd, A.M., C.P.A., *Professorial Lecturer in Accounting*

* The President of the University, the Dean of Faculties, the Dean and Assistant Dean of the School, the Registrar of the University, the Director of Admissions of the University, the Professors, Associate Professors, and Assistant Professors constitute the Faculty.
† On leave of absence spring semester 1957-58.

- Montell Ernest Ogdon, Ph.D., *Professorial Lecturer in Business Administration*
- Ralph Aubrey Young, Ph.D., *Professorial Lecturer in Economics*
- Karl Ernest Stromsem, Ph.D., *Professorial Lecturer in Public Administration*
- Joseph Leo Krieger, Ph.D., *Professorial Lecturer in Business Administration*
- Edwin Lewis, M.B.A., *Professorial Lecturer in Accounting*
- Carl William Clewlow, A.M., *Professorial Lecturer in Business Administration*
- Forest Carlyle Brimacombe, M.B.A., *Professorial Lecturer in Accounting*
- Ira Ernest Steele, A.M., *Professorial Lecturer in Accounting*
- James Leonard Buckler, A.M., *Professorial Lecturer in Accounting*
- Fernand Vincent Demaret, M.S., *Professorial Lecturer in Accounting*
- Frank Higginbotham, M.S., C.P.A., *Professorial Lecturer in Accounting*
- Kenneth Frederick McClure, M.S., LL.B., *Professorial Lecturer on Commercial Law*
- William George Torpey, Ph.D., *Professorial Lecturer in Public Administration*
- Joseph Novak Stonesifer, A.M., *Professorial Lecturer in Business Administration*
- Felix Ira Shaffner, Ph.D., *Professorial Lecturer in Business Administration*
- Solomon Kullback, Ph.D., *Professorial Lecturer in Statistics*
- Hans Heymann, Jr., M.I.A., *Professorial Lecturer in Economics*
- Charles Edwin Houston, Ph.D., *Professorial Lecturer in Business Administration*
- Charles Berns, A.M., LL.B., *Professorial Lecturer in Business Administration*
- Roy Brandon Eastin, Ph.D., *Professorial Lecturer in Public Administration*
- Irving Samuel Schwartz, A.M., *Professorial Lecturer in Public Administration*
- Edward Campion Acheson, Ph.D., *Associate Professor of Finance*
- Carr Bartleson Lavell, A.M., *Associate Professor of Sociology*
- James Norman Mosel, A.M., *Associate Professor of Psychology*
- Rafael Supervía, Doctor en derecho, *Associate Professor of Spanish*
- *William Columbus Davis, Ph.D., *Associate Professor of Latin American History*
- Ronald Bettes Thompson, Ph.D., *Associate Professor of European History*

* On sabbatical leave spring semester 1959-60.

- Frederick Charles Kurtz, M.B.A., C.P.A., *Associate Professor of Accounting*
- John Whitefield Kendrick, Ph.D., *Associate Professor of Economics*
- Richard Catlin Haskett, Ph.D., *Associate Professor of American History*
- *Wilson Emerson Schmidt, Ph.D., *Associate Professor of Economics*
- John Clayton, Ph.D., *Associate Professor of Business Administration*
- Leonard Prestwich, Ph.D., *Associate Professor of Business Administration*
- Helen Bates Yakobson, B.S., *Associate Professor of Russian*
- Harland Walter Westermann, A.M., *Associate Professor of Geography*
- Hugh Linus LeBlanc, Ph.D., *Associate Professor of Political Science*
- Joseph Patrick Murphy, A.B., LL.B., LL.M., *Associate Professorial Lecturer on Commercial Law*
- William Williams Edwards, A.M., *Associate Professorial Lecturer in Business Administration*
- Floyd Millard Riddick, Ph.D., *Associate Professorial Lecturer in Political Science*
- Robert Kaye, A.M., *Associate Professorial Lecturer in Business Administration*
- Robert Amendt Kinney, A.B., *Associate Professorial Lecturer in Political Science*
- Leonard Cornelius Collins, A.B., LL.M., *Associate Professorial Lecturer on Commercial Law*
- Edward McCrensky, Ed.M., *Associate Professorial Lecturer in Public Administration*
- Frederic Siegfried Burin II, Ph.D., *Associate Professorial Lecturer in Political Science*
- John Provan, M.S., *Associate Professorial Lecturer in Business and Public Administration*
- Howard Rowland Ludden, A.M., *Assistant Professor of Political Science*
- John William Skinner, Ph.D., *Assistant Professor of Economics*
- Wilbur Earle Benson, M.B.A., *Assistant Professor of Accounting*
- Alfred Gaylord Obern, Ph.D., *Assistant Professor of Public Administration: Adviser on Government Intern Scholarships*
- Robert Fenn Towson, Jr., D.B.A., *Assistant Professor of Business Administration*
- Earl Elton Pontius, Jr., M.B.A., *Assistant Professor of Accounting*
- Robert John Bond, A.B., *Lecturer in Business Administration*
- William Spencer, A.M., *Lecturer in Political Science*
- George Idelson, B.S., *Lecturer in Business Administration*
- John Morrow, A.M., *Lecturer in Business Administration*
- Walter Draper Neighbors, A.B., C.P.C.U., *Lecturer in Business Administration*

* On sabbatical leave spring semester 1950-51.

Timothy Wadsworth Stanley, A.B., LL.B., *Lecturer in Political Science*
Frederick William Walther, M.B.A., *Lecturer in Business Administration*
Arthur Sparrow Banks, A.M., *Lecturer in Political Science*

COMMITTEES*

THE DEAN'S COUNCIL†

1959

Frederick Charles Kurtz
Leonard Prestwich

1960

James Carlton Dockeray
Ronald Bettes Thompson

1961

Hugh Linus LeBlanc
Alfred Gaylord Obern

COMMITTEE ON ADMISSION AND ADVANCED STANDING

John Withrow Brewer, *Chairman*

Howard Maxwell Merriman

David Springer Brown

COMMITTEE ON CURRICULUM AND PROGRAMS

Ralph Dale Kennedy, *Chairman*

John Withrow Brewer

Arlin Rex Johnson

James Carlton Dockeray

Donald Stevenson Watson

Everett Herschel Johnson

David Springer Brown

COMMITTEE ON DOCTORAL STUDIES

Everett Herschel Johnson, *Chairman*

Richard Norman Owens

Donald Stevenson Watson

Ralph Dale Kennedy

James Carlton Dockeray

EXECUTIVE COMMITTEE, BUREAU OF BUSINESS
AND ECONOMIC RESEARCH

James Carlton Dockeray, *Chairman*

Richard Norman Owens

Donald Stevenson Watson

Ralph Dale Kennedy

Everett Herschel Johnson

GENERAL INFORMATION

INTRODUCTORY

The George Washington University has provided training in both foreign service and governmental theory and administration throughout

* The Dean of the School of Government is a member ex officio of all committees.
† Elected by the Faculty.

its history. This was one of its purposes when chartered in 1821. The School of Government was established in 1928 to bring together in various undergraduate and graduate curricula the work offered in foreign service and much of the other academic work in the theory and administration of government.

It is the purpose of the School to give the student an understanding of his responsibilities under the Constitution of the United States in the conduct of public office, domestic and foreign, and to prepare students for careers not only in governmental service but also in related business and professional fields. This can be accomplished not through any single course but through curricula which correlate social, economic, political, historical, business, and psychological studies.

The program embraces both graduate and undergraduate work. Curricula leading to the degree of Bachelor of Arts in Government are offered in Foreign Affairs, Public Affairs, Accounting, Business Administration, and Business and Economic Statistics. Graduate work leading to a Master's degree is available in each of these fields and in Economic Policy, Public Administration, Personnel Administration, Counseling, and Psychometrics. Graduate study leading to the degree of Doctor of Business Administration is also available (see pages 207-8).

The Foreign Affairs program is broad, covering international political relations, international trade and finance, international communications, and regional studies. Its purpose is to equip students, by providing general background and specialized work, for careers in the field of American foreign relations. The diplomatic service of the United States, the several agencies of government with responsibilities in the international field, the international organizations, and American enterprise abroad offer opportunities in this field.

The Public Affairs program is a similar broad, composite curriculum covering the appropriate phases of domestic government and policy.

Governmental service requires special training and background in many other areas, including economic research, statistical investigation, accounting, administrative management, and personnel administration. The academic background for such work is offered in the various curricula of the School and is described below.

REGULATIONS

Students in the School of Government are subject to, and are expected to familiarize themselves with, the regulations concerning Admission, Registration, Fees and Finances stated on pages 13-20, and the University regulations stated on pages 50-58.

AMOUNT OF WORK

A full-time student not on probation may take ordinarily not more than 17 semester hours. A student employed more than 24 hours a week, who is not on probation, may take not more than 10 semester hours.

A full-time undergraduate student whose quality-point index is 3.50 or higher may take not more than 19 semester hours. An undergraduate student employed more than 24 hours a week, whose quality-point index is 3.50 or higher, may take up to 12 semester hours.

A student previously unemployed who accepts employment subsequent to registration or at any time during a semester is required to report that fact immediately to the Dean, in order that adjustments in schedule may be made, if necessary, to bring his program within the Faculty's limitations upon the amount of work to be carried by an employed student.

Exception to these rules will require the approval of the Dean.

ATTENDANCE

The student is held responsible for all the work of the courses in which he is registered, and all absences must be excused by the instructor in charge before provision is made for him to make up the work missed.

CLASSIFICATION OF STUDENTS

A student who holds an Associate in Arts degree from the Junior College or the equivalent from another accredited institution, and who has registered his choice of one of the prescribed curricula at the Office of the Registrar, is classed as a *junior*. A student who has completed 30 semester hours in the School of Government is classed as a *senior*. A student who has satisfactorily completed the work for a Bachelor's degree and who has registered his choice of one of the prescribed fields of study at the Office of the Registrar, is classed as a *master in course*.

INDEPENDENT STUDY PLAN

Under the independent study plan a student of demonstrated capacity, with special interest in the subject matter of a course, may be permitted to undertake independent study under the personal direction of an instructor, in accordance with the rules of the department of instruction in which the subject falls. Credit under this plan is limited to the specific course credits as designated in the list of courses of instruction in this CATALOGUE.

THE DEGREE OF BACHELOR OF ARTS IN GOVERNMENT

Upon the satisfactory completion of the undergraduate requirements of the School of Government, the degree of Bachelor of Arts in Government, with a designation of the major field of study, is conferred. The

major fields are Foreign Affairs, Public Affairs, Accounting, Business Administration, and Business and Economic Statistics.

Students who have a special need for integrating courses from several departments or from more than one major field may request approval by a faculty committee, of a special major program. The same rules and regulations will apply as in the regularly offered majors.

REQUIREMENTS FOR THE DEGREE

SCHOLARSHIP

The system of grading and of computing scholarship is described in detail on pages 50 and 51.

In order to graduate, a student must have the following: (1) a quality-point index in all of his work of at least 2.00 and (2) a quality-point index of at least 2.50 in his major. The major includes the required courses and courses taken in the group options.

Dean's Honor List.—The names of students who achieve a quality-point index of 3.50 or higher will be placed on the Dean's Honor List for that semester. Appearance on the List will be limited to (1) full-time students who have been registered for a minimum of 12 semester hours and (2) part-time students who have been registered for a minimum of 12 semester hours over a period of two consecutive semesters which may include the summer term.

Probation.—A student must maintain a quality-point index of at least 2.00, or be placed on probation, where he will remain as long as his quality-point index is below 2.00.

Suspension.—A student who has a quality-point index below 1.50 or who is placed on probation for a third semester, whether successive or after an interval, will be suspended.

A student suspended for poor scholarship may apply for readmission after an interval of one calendar year. He must then submit evidence to the Committee on Admission and Advanced Standing that during his absence from the University, he has so conducted himself as to indicate that he will profit by readmission. A student suspended twice for poor scholarship will not be readmitted.

A student with a limited schedule is affected by the foregoing scholarship rules only when he has undertaken 15 semester hours.

RESIDENCE

For residence requirements, see the University regulations on pages 54 and 55.

CURRICULUM REQUIREMENTS

To be recommended by the Faculty for graduation, candidates in the School of Government are required to complete, in addition to the appropriate Junior College Work (see curricula on pages 74 and 75), a minimum of 60 semester hours during the junior and senior college years, as set forth in one of the following curricula:

Foreign Affairs

	Semester Hours
Econ. 181-82...International Economics.....	6
Hist. 150.....European Diplomatic History since 1878	
or Pol. Sc. 171...International Politics.....	3
Hist. 181-82...Diplomatic History of the United States.....	6
Pol. Sc. 172...International Organization: The United Nations.....	3
Pol. Sc. 181-82...International Law.....	6
Pol. Sc. 197...Proseminar in Foreign Affairs.....	3
Foreign Language ....Composition and Conversation.....	6
Geography	3
Group Option ..(To be selected from one of the following groups).....	15
Electives .....(To be selected in consultation with adviser).....	9
Total.....	60

All foreign affairs majors must complete the *required* courses listed above. The group option provides specialization in international politics, international economics, international communications, or a geographic region, depending upon the student's interest. Normally no more than six semester hours may be taken in an option other than the one selected. Consent of the adviser must be obtained for such modification of the option selected.

Group I—International Politics

This group option (15 semester hours as noted in list above) is composed of courses in the departments of Political Science, History, and Geography which are related to the study of American diplomatic relations. The selection of courses must be made in consultation with the adviser.

Group II—International Economic Relations

This group option (15 semester hours as noted in list above) is composed of courses offered primarily by the departments of Economics and Business and Public Administration which are related to the study of American economic, financial, and business relationships with foreign countries. The selection of courses must be made in consultation with the adviser.

Group III—International Communications

This group option (15 semester hours as noted in list above) is composed of courses offered primarily by the departments of Political Science, Psychology, Sociology and Anthropology, and Journalism which are related to the study of international information programs, public opinion, psychological warfare, cultural relations, and public relations. (It is recommended that the student include statistics in his Junior College program.) The selection of courses must be made in consultation with the adviser.

Group IV—Area or Regional Studies

This group option (15 semester hours as noted in the list above) may be selected from courses offered in the departments of Economics, History, Political Science, and Geography. Integrated programs of study are available in the following regions or areas: Europe and the Middle East, Asia and the Pacific Area, the Soviet Orbit, and Latin America. Modifications and combinations of these areas may be made if approved by the adviser, who must also approve the individual courses selected for the option. The foreign language, noted in list above, should be one that is suitable for study of the region or area selected.

Public Affairs

	Semester Hours
Econ. 121.....Money and Banking.....	3
Econ. 161-62...Public Finance and Taxation.....	6
Econ. 165.....Government Control of Economic Activity.....	3
Hist. 172.....Social History of the United States since 1861	
or Hist. 173 Representative Americans	
or Hist. 176...Political and Constitutional History of the United States since 1861.....	3
Pol. Sc. 121-22...The Constitution of the United States.....	6
Pol. Sc. 145.....Political Parties and Politics.....	3
Pol. Sc. 151-52...Public Administration.....	6
Pol. Sc. 166.....Field Work in Government.....	3
Group Option... (To be selected from one of the following groups).....	15
Electives (To be selected in consultation with adviser).....	12
Total.....	60

All public affairs majors must complete the *required* courses listed above. The group option provides specialization in domestic economics or politics. Modification and substitutions may be made when appropriate or necessary provided the consent of the adviser is obtained.

Group I—Economics Option

	Semester Hours
Econ. 101.....Economic Analysis.....	3
Econ. 105.....Business Cycles.....	3
Econ. 141.....Industrial Relations.....	3
Econ. 142.....Labor Economics.....	3
Hist. 174.....Economic History of the United States.....	3
Total.....	15

Group II—Politics Option

	Semester Hours
Hist. 175-76...Political and Constitutional History of the United States.....	6
Pol. Sc. 111...Introduction to Comparative Government.....	3
Pol. Sc. 118 Political Theory	
or Pol. Sc. 120 Foundations of American Democracy.....	3
Pol. Sc. 146 Political Pressures and Public Reactions	
or Psych. 156 Psychology of Propaganda and Public Opinion.....	3
Total.....	15

Business Administration

	Semester Hours
Bus. Adm. 101.....Business Organization and Combination.....	3
Bus. Adm. 102.....Fundamentals of Management.....	3
Bus. Adm. 105.....Personnel Management.....	3
Bus. Adm. 131.....Business Finance.....	3
Bus. Adm. 141.....Principles of Marketing.....	3
Bus. Adm. 161.....Commercial Law: Contracts, Sales, Agency, and Bailments.....	3
Bus. Adm. 162.....Commercial Law: Negotiable Instruments, Property, Mortgages.....	3
Bus. Adm. 198.....Case Problems in Management.....	3
Acct. 193.....Business Budgeting.....	3
Econ. 121.....Money and Banking.....	3
Group Option (to be selected from one of the following groups).....	30
Electives (to be selected in consultation with the adviser).....	15
Total.....	60

All Business Administration majors must complete the *required* courses listed above. The group options shown below provide specialization in several aspects of business. Selection of the option and the courses (15 semester hours) to be taken in it must be made in consultation with the adviser. Normally no more than 6 semester hours may be taken in an option other than the one selected. Consent of the adviser must be obtained if the student wishes such modification of his option group.

Group I—General Business

This group option is made up of selected courses offered by the departments of Accounting, Business and Public Administration, Economics, and Statistics.

Group II—Personnel Management

This group option is made up of selected courses offered by the departments of Business and Public Administration, Economics, Psychology, Speech, and Statistics.

Group III—Finance

This group option is made up of selected courses offered by the departments of Accounting, Business and Public Administration, Economics, Political Science, and Statistics.

Group IV—Marketing

This group option is made up of selected courses offered by the departments of Business and Public Administration, Economics, Geography, and Statistics.

Group V—Controllorship

This group option is made up of selected courses offered by the departments of Accounting, Business and Public Administration, and Economics.

Group VI—Economics

This group option is made up of selected courses offered by the departments of Economics and Business and Public Administration.

Group VII—Statistics

This group option is made up of selected courses offered by the Department of Statistics.

Group VIII—Transportation and Public Utilities

This group option is made up of selected courses offered by the departments of Business and Public Administration, Economics, Geography, History, and Statistics.

Foreign Commerce.—Business Administration majors who wish to specialize in foreign commerce may request a modification of the above requirements. The modified major excludes some of the above required courses and adds others, such as a third year of foreign language, foreign markets, exporting and importing, economic geography, and other courses relating to overseas trade. Each program must be approved by the adviser.

Accounting

	Semester Hours
Acct. 101.....Cost Accounting.....	3
Acct. 111.....Financial Statement Analysis.....	3
Acct. 121-22.....Intermediate Accounting.....	6
Acct. 132.....Accounting Theory.....	3
Acct. 171.....Auditing.....	3
Acct. 181.....Accounting Systems.....	3
Acct. 193.....Business Budgeting.....	3
Bus. Adm. 102.....Fundamentals of Management.....	3
Bus. Adm. 131.....Business Finance.....	3
Bus. Adm. 161.....Commercial Law: Contracts, Sales, Agency, and Bailments.....	3
Bus. Adm. 162.....Commercial Law: Negotiable Instruments, Property, Mortgages.....	3
Econ. 121.....Money and Banking.....	3
Group Option (to be selected from one of the following groups).....	15
Electives (to be selected in consultation with the adviser).....	6
Total.....	60

All Accounting majors must complete the *required* courses listed above. The group options shown below provide specialization in public accounting, commercial and industrial accounting, and governmental accounting and budgeting. Selection of the option and the courses (15 semester hours) to be taken in it must be made in consultation with the adviser.

Group I—Public Accounting

This group option is made up of selected courses offered by the departments of Accounting, Business and Public Administration, and Political Science.

Group II—Commercial and Industrial Accounting

This group option is made up of selected courses offered by the departments of Accounting, Business and Public Administration, Economics, and Statistics.

Group III—Governmental Accounting and Budgeting

This group option is made up of selected courses offered by the departments of Accounting, Business and Public Administration, Political Science, and Economics.

Business and Economic Statistics

	Semester Hours
Stat. 111.....Business and Economic Statistics I.....	3
Stat. 112.....Business and Economic Statistics II.....	3
Stat. 117.....Analysis of Variance I.....	3
Stat. 118.....Correlation and the Chi-square Test I.....	3
Stat. 195-96.....Reading and Research in Business and Economic Statistics	6
Bus. Adm. 101.....Business Organization and Combination.....	3
Bus. Adm. 102.....Fundamentals of Management.....	3
Econ. 101-2.....Economic Analysis.....	6
Econ. 105.....Business Cycles.....	3
Electives (A).....(To be selected from Statistics).....	6
Electives (B).....(From Accounting, Business Administration, Economics, and Statistics in consultation with the adviser).....	21
Total.....	60

EXAMINATIONS FOR WAIVING CURRICULUM REQUIREMENTS

A student wishing to omit a required course may take such examination as the department prescribes, and, on passing satisfactorily, he may be relieved of the curriculum requirement in that subject and may qualify for registration in an advanced course. Passing of this examination does not entitle the student to any hours of credit toward the degree. A student desiring to take such examinations should make the request of the Dean and pay the required fee.

GRADUATE RECORD EXAMINATIONS

During the final semester of the senior year students in the School of Government are required to take the following Graduate Record Examinations: the Aptitude Test, which provides a measure of general scholastic ability at the graduate level; and Area Tests (achievement), which measure breadth of knowledge and understanding in three broad areas of the liberal arts: Natural Science, Social Science, and the Humanities. (For further information concerning the Graduate Record Examinations, see page 55.)

THE MASTER'S DEGREES

Upon the satisfactory completion of the graduate requirements of the School of Government, one of the following degrees is conferred: (1) Master of Arts in Government with a major in Foreign Affairs, Public Affairs, Economic Policy, Accounting, Business and Economic Statistics, Counseling, or Psychometrics; (2) Master of Arts in Public Administration; (3) Master of Arts in Personnel Administration; (4) Master of Business Administration.

ADMISSION TO CANDIDACY

A student is formally recognized as a candidate for the Master's degree only when his application for candidacy has been approved.

A 3.00 average in the undergraduate major is normally required for admission to graduate study.

The candidate for the Master's degree who is deficient in undergraduate preparation may take a comprehensive examination on his undergraduate major field. Passing of this examination entitles the student to admission without taking specific courses to make up his deficiencies.

In courses taken to satisfy undergraduate deficiencies, the student must maintain at least a 3.00 average to be eligible for admission to graduate study.

Candidates for the Master of Arts degree in Foreign Affairs, Public Affairs, or Economic Policy must show a reading knowledge (certified by the appropriate language department) of at least one modern foreign language, to be approved by the Dean. Such examination should be taken before the student begins the second 15 hours of his work. No student will be permitted to take the examination after three unsuccessful attempts.

REQUIREMENTS FOR THE DEGREES

A minimum of 30 semester hours of work, as outlined in the curricula on pages 202-4, must be completed successfully. Variations from these curricula require the permission of the Dean.

No part of the minimum requirements may be taken in any other institution.

A second-group course (numbered 101-200) may be counted toward the Master's degree only when registration for advanced credit has been approved at the beginning of the course by the Dean and by the officer of instruction, and provided that the student has done such extra work in the course as may be prescribed by the instructor.

All work for the Master's degrees must be completed in three years, unless an extension of time is granted by the Dean's Council. Validation examinations may be required.

In addition to the course examinations, the candidate must pass a comprehensive written examination in his major field. These examinations are scheduled two or more times a year (usually in December and in April), and should be taken shortly before or shortly after the completion of the prescribed course work. The candidate must consult with his adviser, well in advance, as to the date of his examination and the definition of the subject-matter fields which this examination is to cover. An oral examination on his thesis may also be required.

No work counted toward a Bachelor's degree may be counted toward a Master's degree.

A student who expects to continue his studies for the degree of Doctor of Philosophy (Graduate Council) or Doctor of Business Administration, after receiving the Master's degree, will be assisted in planning his program so that he may qualify for admission to candidacy for the Doctorate.

RESIDENCE

No credit is granted for work done *in absentia*, i.e., without formal instruction, except for the thesis, which may be completed *in absentia* with the permission of the department or committee concerned.

SCHOLARSHIP

Grades for graduate work are "Excellent", "Satisfactory", and "Unsatisfactory"; for further details, see pages 50-51. A minimum of 6 of the first 30 semester hours of course work completed in the Master's program must be graded "Excellent".

A Master's candidate who has accumulated more than 6 semester hours of "Unsatisfactory" will be automatically suspended.

CURRICULUM REQUIREMENTS

A normal program includes a minimum of 24 semester hours of course work and the thesis (6 semester hours), to be selected from the courses listed under the chosen major field, and such other courses as may be necessary. Programs should be prepared in advance in consultation with the adviser and submitted to the Dean on the appropriate form; if the program is not completed at the time of registration this must be attended to not later than one month following registration.

THE THESIS

Students who plan to complete work for a Master's degree in one year should register for the thesis at the beginning of the year; otherwise the thesis should be registered for not later than the beginning of the final year. The choice of the thesis subject must be approved by the professor in charge and recorded in the Office of the Registrar by the date announced in the University calendar. The thesis in its final form must have the approval of the professor in charge and must be presented to the Dean by the student no later than the date announced in the University calendar. Printed copies of detailed regulations regarding the form and reproduction of the thesis (see pages 55-56) are available in the Office of the Dean.

Payment of tuition for the thesis entitles the candidate, during the academic year of registration, to the advice and direction of the member

of the Faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year is granted without further tuition payment. The student must, however, be registered in residence during this period. If the preparation of the thesis extends beyond the two-year period, it must be registered for again, and tuition paid on the same basis as for a repeated course.

MASTER OF ARTS IN GOVERNMENT

This degree is offered in seven different curricula which are described below.

Students who have a special need for integrating courses from two or more of the major fields of concentration for the degree of Master of Arts in Government may request approval, by a faculty committee, of a special major program. All rules and regulations for the degree of Master of Arts in Government will apply to such special programs.

FOREIGN AFFAIRS

Prerequisite: an undergraduate major in foreign affairs, economics, history, or political science, depending upon the field of specialization. Any course deficiency in foreign affairs must be made up.

The program in Foreign Affairs is offered in four fields of specialization: International Economics, International Politics, International Communications, and Regional Studies.

International Economics.—Graduate courses in economics (numbered over 200) in the field of international trade, the balance of payments, international trade policies, and international economic policies form the principal part of this specialization. Graduate courses in economic theory are recommended. Other courses may be included with the consent of the adviser.

International Politics.—Graduate courses in political science and history (numbered over 200), in international law, international politics, international organization, diplomatic history, and American foreign policy, comprise the principal requirements for this specialization. Related courses may be added with the consent of the adviser.

International Communications.—Graduate courses (numbered over 200) in political science, psychology, sociology and anthropology, and geography with 12 hours (one-half of the course work) in the fields of public opinion, international information, psychological warfare, and communications, and 12 hours (one-half of the course work) in the fields of international politics and area studies. The adviser in all cases must approve the course selections.

Regional Studies.—Graduate courses in economics, political science, history, and geography (numbered over 200) dealing with a geographic region, such as Latin America, Europe and the Middle East, Asia, the Soviet Orbit, or the Pacific Area, comprise the principal requirements. Other courses of broader scope in economics, history, and political science are recommended as part of the program. The adviser in all cases must approve such selections.

The listing of graduate courses for these fields of specialization is given in the departmental offerings for Economics, History, Political Science, Geography, Psychology, and Sociology and Anthropology.

PUBLIC AFFAIRS

Prerequisite: an undergraduate major in public affairs, economics, history, or political science, depending upon the field of specialization. Any course deficiency in the Public Affairs Curriculum, as stated on page 196 must be made up.

The program in Public Affairs is offered in two fields of specialization: Domestic Economics and Domestic Politics.

Graduate course required of all students: Political Science 205-6, The Federal Executive.

Recommended for Domestic Economics: courses in economic development, economic policy, public finance, and national income.

Recommended for Domestic Politics: courses in United States social, constitutional, and political history; comparative government; political theory; legislative organization; jurisprudence; political parties; and public opinion.

ECONOMIC POLICY

Prerequisite: an undergraduate major in economics or the equivalent.

Graduate courses in economics required: Economics 265-66, Economic Policy.

Recommended: courses in income and employment, national income, business cycles, monetary and fiscal policy, economic theory, and statistics. These courses and others that may be appropriate are to be selected with the consent of the adviser.

ACCOUNTING

Prerequisite: an undergraduate major in accounting or the equivalent. The program in Accounting requires the following courses:

	Semester Hours
Acct. 231.....Contemporary Accounting Theory.....	3
Acct. 295-96.....Seminar in Accounting.....	6
Acct. 299-300.....Thesis	6

Of the remaining 15 semester hours, 9 must be in accounting and 6 in related fields selected with the approval of the adviser.

BUSINESS AND ECONOMIC STATISTICS

Prerequisite: an undergraduate major in business and economic statistics, or the equivalent; such work must include a minimum of 24 semester hours of second-group courses in statistics and a minimum of 18 semester hours in second-group courses in accounting, business administration, and economics.

The Master of Arts program requires at least 12 semester hours of graduate courses in statistics. The remaining 12 semester hours are to be selected from graduate work offered by the departments of Accounting, Business and Public Administration, Economics, and Statistics with the approval of the adviser.

COUNSELING

Prerequisite: an undergraduate major in psychology, business administration, or education; or an undergraduate major in the social sciences appropriate to specialization in this field. The undergraduate background should include necessary basic training in such fields as psychology, sociology, statistics, labor economics, and business management or public administration.

The Master of Arts program in Counseling requires the following courses:

	Semester Hours
Psych. 220.....Seminar: Abnormal Psychology	
or	
Psych. 225.....Seminar: Mental Hygiene.....	3
Psych. 227.....Seminar: Counseling and Guidance.....	3
Psych. 228.....Seminar: Techniques of Counseling.....	3
Psych. 229.....Seminar: Occupational and Educational Informa- tion	3
Psych. 236.....Seminar: Analysis of the Individual for Pur- poses of Counseling.....	3

The remaining 9 hours are elective, with the approval of the adviser.

PSYCHOMETRICS

Prerequisite: an undergraduate major in psychology, statistics, or the social sciences which includes twelve credits in psychology (general psychology, tests and measurements, personnel psychology, and related psychology courses); general statistics; mathematics through college algebra (preferably through calculus).

The Master of Arts program in Psychometrics requires the following courses:

	Semester Hours
Psych. 231.....Test Construction.....	3
Psych. 234.....Seminar: Test Theory.....	3
Psych. 246.....Seminar: Personnel Measurement Techniques.....	3
Psych. 299-300.....Thesis	6
Stat. 105.....Statistics in Psychology and Education.....	3
Stat. 117.....Analysis of Variance I.....	3
Stat. 118.....Correlation and the Chi-square Test I.....	3

The remaining 6 hours are elective, with the approval of the adviser.

MASTER OF ARTS IN PUBLIC ADMINISTRATION

The purpose of the program in Public Administration is to prepare graduates to enter public service in the field of administration and to improve the competence of those already in public employment. The program assumes that effective performance at all levels of administration calls for an understanding of the human factors involved, a knowledge of the nature and institutional characteristics of administration in the public service, and an ability to apply the methods and techniques of management. An understanding of all three elements is provided by bringing together into the program different disciplines, including courses in political science, business and public administration, psychology, economics, accounting, and statistics.

Prerequisite: an undergraduate background in the social sciences, business administration or, in the absence of such course work, appropriate experience in government service.

The candidate for the degree must successfully complete a minimum of 36 hours at the graduate level. This will include 6 hours of thesis. Of the remain-

ing 24 semester hours, students must select at least 6 hours from each of the three groups indicated below, and such other courses as are necessary to complete the program. Selection of all courses by the student must have the approval of the adviser.

GROUP I. HUMAN FACTORS IN ADMINISTRATION

	Semester Hours
Bus. Adm. 288.....Executive Leadership	3
Psych. 228.....Seminar: Techniques of Counseling.....	3
Pub. Adm. 231.....Public Personnel Management.....	3
Pub. Adm. 232.....Personnel Procedures and Problems.....	3
Pub. Adm. 233.....Seminar in Manpower Development and Util- ization	3
Pub. Adm. 237.....Intermediate Management and Supervision...	3
Pub. Adm. 241.....Human Relations in Governmental Adminis- tration	3
Pub. Adm. 272.....Reading and Conference Course in Public Personnel Administration.....	3

GROUP II. METHODS AND TOOLS OF MANAGEMENT

	Semester Hours
Acct. 141.....Governmental Accounting.....	3
Acct. 246.....Governmental Accounting and Budgeting Prob- lems	3
Bus. Adm. 109.....Office Management.....	3
Bus. Adm. 268.....Management Engineering.....	3
Psych. 255.....Seminar: Techniques of Opinion and Attitude Measurement	3
Pub. Adm. 215.....Seminar in Comparative Administrative Systems	3
Pub. Adm. 216.....Management Analysis and Methods Improve- ment	3
Pub. Adm. 217.....New Tools of Management.....	3
Pub. Adm. 221-22.....Staff Functions in Government.....	6
Pub. Adm. 254.....Controllership in the Federal Services.....	3
Pub. Adm. 259.....Government Procurement and Property Man- agement	3
Stat. 109.....Managerial Statistics.....	3

GROUP III. PROGRAM MANAGEMENT AND POLICY DIRECTION

	Semester Hours
Bus. Adm. 102.....Fundamentals of Management.....	3
Bus. Adm. 286.....Management in the Armed Forces.....	3
Econ. 261-62.....Public Finance and Fiscal Policy.....	6
Econ. 266.....Problems of Governmental Economic Policy...	3
Pol. Sc. 162.....Administrative Law.....	3
Pub. Adm. 210.....The Management Function.....	3
Pub. Adm. 211.....Problems of Governmental Organization.....	3
Pub. Adm. 212.....Case Studies in Administration.....	3
Pub. Adm. 225-26.....Internship in the Administrative Processes...	6
Pub. Adm. 251.....Governmental Budgeting.....	3

	Semester Hours
Pub. Adm. 252.....Seminar in Planning and Programming.....	3
Pub. Adm. 260.....Seminar in Policy Formulation and Adminis- tration	3
Pub. Adm. 261.....Public Opinion and the Administrator.....	3
Pub. Adm. 262.....Contemporary Administrative Theory and Practice	3
Pub. Adm. 271.....Reading and Conference Course in Public Management and Administration.....	3

MASTER OF ARTS IN PERSONNEL ADMINISTRATION

The purpose of the program for the degree of Master of Arts in Personnel Administration is to train graduates in personnel management techniques and problems. While the emphasis is placed on governmental personnel work, the curriculum may be adapted to the interest of graduates who plan a career in personnel relations in business.

Prerequisite: an undergraduate background in the social sciences or, in the absence of such course work, appropriate experience in personnel work. Special course prerequisites will be required.

In addition to the thesis, the program requires 24 graduate credits, in general developed from the following, with the approval of the adviser:

	Semester Hours
Bus. Adm. 291-92.....Seminar in Business Management.....	6
Econ. 241.....Labor Economics.....	3
Econ. 244.....Collective Bargaining.....	3
Psych. 227.....Seminar: Counseling and Guidance.....	3
Psych. 244.....Seminar: Job Analysis and Evaluation.....	3
Psych. 245.....Seminar: Employee Motivation and Morale.....	3
Psych. 246.....Seminar: Personnel Measurement Techniques.....	3
Pub. Adm. 210.....The Management Function.....	3
Pub. Adm. 231.....Public Personnel Management.....	3
Pub. Adm. 232.....Personnel Procedures and Problems.....	3
Pub. Adm. 233.....Seminar in Manpower Development and Uti- lization	3
Pub. Adm. 241.....Human Relations in Governmental Adminis- tration	3
Pub. Adm. 272.....Reading and Conference Course in Public Per- sonnel Administration.....	3

MASTER OF BUSINESS ADMINISTRATION

This curriculum provides the graduate student with the general and specialized training which will help him advance to responsible positions in business. The program is also valuable for many positions in government, particularly those in "business-type" operations.

The Master of Business Administration program is sufficiently flexible to meet the basic requirements of any vocational objective requiring knowledge of management principles. While most students in this program will normally take Business Administration 201, Advanced Man-

agement, and Business Administration 291-92, Seminar in Business Management, and other courses in Business Administration, the individual program should be planned with an adviser so as to include graduate courses offered by other departments wherever appropriate. Particular attention should be given the offerings under Public Administration, Economics, Accounting, Statistics, and Psychology.

The degree of Master of Business Administration is granted upon successful completion of 24 hours of course work and 6 hours of *Thesis*. An individual program should be planned in consultation with an adviser.

The thesis area as well as the thesis subject should be selected as early as possible so as to permit effective integration with the course work. Students who do not present a satisfactory undergraduate major will be required to take prerequisite courses, which will be selected in accordance with individual qualification and work experience.

DOCTOR OF BUSINESS ADMINISTRATION

The work for this degree is under the supervision of the Committee on Doctoral Studies of the School of Government.

An applicant must have the degree of Master of Business Administration, Master of Arts in Business Administration, or Master of Arts in a related field, or the equivalent of such degrees, together with acceptable personal qualities and a capacity for creative scholarship. Each applicant must demonstrate his competence in Statistics and Accounting by qualifying examinations.

After admitting an applicant, the Committee on Doctoral Studies, in consultation with the applicant, will designate six fields of study and appoint an adviser to guide the student in his work in these fields. As part of this work, the student must complete a minimum of 30 semester hours in graduate courses. Additional course work may be prescribed by the adviser.

When the applicant has satisfied his adviser and the Committee of his readiness to take the General Examination, this Examination will be scheduled.

The General Examination is a written comprehensive on fields of study not limited to the subject matter of courses taken in these fields. Two fields of study are required of all applicants: Economic Theory and Business and Economic History. The four additional fields, selected by the Committee and the applicant, will be drawn from the following list: Marketing, Organization and Management, Business Finance and Investments, Personnel Management, Public Administration, Accounting Theory, Money and Banking, Statistics, Transportation and Traffic Management, and such others as the Committee may designate.

Upon successful completion of the General Examination and approval of the subject of the doctoral dissertation, the student may be admitted to candidacy by the Committee on Doctoral Studies. The candidate's research and the preparation of his dissertation are supervised by a Research Adviser designated by the Committee.

THE DISSERTATION

No later than the date specified in the University calendar the candidate must submit to the Dean three complete copies of the dissertation together with a fourth copy of the summary. Printed copies of detailed regulations regarding the form and reproduction of the dissertation and its summary (see pages 55-56) are available in the Office of the Dean. The summaries of accepted dissertations will be printed in a numbered issue of the University BULLETIN. The successful candidate for the doctorate is required, before receiving his degree, to pay a fee to cover the expense of printing the summary of his dissertation.

THE FINAL EXAMINATION

The Final Examination of the candidate consists of his oral defense of the dissertation. The examination will be given by a committee appointed by the Committee on Doctoral Studies. Upon successful completion of this oral examination the candidate will be approved for the degree of Doctor of Business Administration by the Committee on Doctoral Studies.

SPECIAL PROGRAMS

The Government Management Intern Scholarship Program offers annually fifty scholarships to assist federal agencies in training carefully selected young men and women for administrative leadership in government career service. Each scholarship provides a tuition-free course of 3 hours a semester and appropriate academic credit (up to 6 semester hours) for the successful completion of training assignments required in any agency which has been evaluated by the University.

The Navy Graduate Comptrollership Program, sponsored by the Naval Post Graduate School, provides 50 semester hours of work in comptrollership and related fields for a selected group of Naval and Marine officers. The Master's degree is awarded upon successful completion of this full-year program.

The Air Force Advanced Management Program, sponsored by the United States Air Force Institute of Technology, provides 50 semester hours of work in advanced management and supporting fields for

selected group of Air Force officers. Most of the officers receive the Master's degree upon successful completion of this full-year program.

The School of Government cooperates with the College of General Studies in the Off-Campus program of that College, particularly in the fields of controllership, governmental administration, and personnel administration.

The Department of Business and Public Administration offers work in the field of property and casualty insurance as part of the educational program of the American Institute for Property and Liability Underwriters, Inc.

BUREAU OF BUSINESS AND ECONOMIC RESEARCH

The Bureau, as part of the School of Government, was established to conduct research in both the fields of business and economics. This work is under the direction of the Executive Committee of the Bureau of Business and Economic Research. Special attention is given to problems of the metropolitan area of Washington, D. C. Research projects are also sponsored by public and private agencies. Both faculty and students of the School of Government participate in the activities of the Bureau of Business and Economic Research. Results of research activities as well as abstracts of selected Masters' theses are reproduced and disseminated by the Bureau.

THE COLLEGE OF GENERAL STUDIES

Grover LaMarr Angel, A.M., Ed.D., *Dean of the College of General Studies*

Walter Harold Hayes, Jr., A.M., *Assistant Dean in the College of General Studies*

Robert Clinton Rutledge, A.M., *Director of the Off-Campus Division*

Mary Ellen Coleman, A.M., *Director of the Reading Clinic*

COMMITTEES •

THE DEAN'S COUNCIL †

Benjamin Douglass Van Evera
Arlin Rex Johnson
Don Carlos Faith

Carl Hugo Walther
Blake Smith Root
Philip Henry Highfill, Jr.

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Harland Walter Westermann

James Carlton Dockeray
James Willard Harkness
Harold Griffith Sutton, *ex officio*

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Burnice Herman Jarman, *Chairman*

Benjamin Douglass Van Evera

Richard Walton Stephens

James Harold Coberly

• The Dean and Assistant Dean are members *ex officio* of all committees.

† The Dean of Faculties, the Dean and the Assistant Dean in the College are members *ex officio* of the Council.

GENERAL INFORMATION

The College of General Studies was established in 1950 to extend the adult education facilities of the University; to introduce experimental procedures in conducting programs of study for mature students; and to provide auxiliary courses not included in formal programs of study, in response to community interest. The college includes the Off-Campus Division, the Campus Division, and the Division of Community Services.

Off-Campus Division

The Off-Campus Division works closely with personnel administrators, training officers, school officials, and others interested in developing programs of inservice training or off-duty education for employees in departments of the Federal Government, business and industry; for people working in the fields of education; and for service personnel in nearby military installations. Credit and noncredit courses are organized in any field in which there is sufficient demand and for which instructional facilities can be made available. These courses meet at the time and place most convenient for the students enrolled and may begin at any time of the year. Credit courses may be applied toward a degree in any college or school of the University provided (1) the student is accepted for degree candidacy in that school or college, (2) the courses meet the curriculum requirements of the school or college, and (3) the number of semester hours earned in the College of General Studies does not exceed the maximum allowed in transfer by the school or college concerned. Credit courses may be transferred to other colleges and universities.

Admission to Course Work

Admission to an off-campus course does not constitute admission to degree candidacy or permission to attend classes on campus.

A simplified procedure for admission and registration in off-campus courses is conducted at or prior to the first meeting of the class. Transcripts of previous academic work are not required. Registration in credit courses is restricted to those whose qualifications indicate that they are able to complete the course successfully. Students enrolled in any other college, school, or division of the University may take credit courses in the College of General Studies *only by permission of the dean* of the college, school, or division concerned. In general, off-campus noncredit courses are open to any individual interested in enrolling. However, when a course is organized at the request of some particular agency or group, admission may be restricted to the students recommended by the sponsoring organization. A limit on the size of classes may have to be imposed in order to maintain the quality of instruction.

Admission to Degree Candidacy

In agencies and service installations where there is sufficient enrollment to permit offering the necessary range of courses, it is possible to earn the Associate in Arts, Associate in Science, Bachelor of Arts, Bachelor of Science in Cartography, and Master of Arts in the fields of Controllershship, Governmental Administration, and Personnel Management, without campus study. For further information, see the bulletin of the College of General Studies.

Campus Division

The Campus Division is designed for promising adults with unusual backgrounds who merit the individual consideration made possible by this Division's experimental approach to admission, advanced standing, curricula, and evaluation of achievement. The criteria of eligibility for admission are stringent in order to limit matriculation to (1) adults well qualified to undertake college work but lacking certain academic requirements for admission to other degree-granting schools and colleges of the University and (2) adults who, through work experience, have gained broad knowledge and high competency in some area of learning. This knowledge may be validated by special examination to gain advanced standing toward a degree.

Requirements for Admission

The applicant must meet the following requirements:

1. He must be an adult who has achieved outstanding success in his vocation.
2. He must have completed, with the grade of at least C+, 12 semester hours in the Off-Campus Division, the Division of University Students, or the Division of Special Students. The student who has completed a substantial amount of college work elsewhere with excellent grades may apply for admission to degree candidacy after 6 semester hours at The George Washington University.
3. He must present valid reasons for selecting degree candidacy in the Campus Division of the College of General Studies rather than in another school or college of the University.
4. He must enroll for at least two courses a semester on Campus. Full-time study is encouraged.

Degrees

The Campus Division offers programs leading to the degrees of Associate in Arts and Bachelor of Arts. In cooperation with Columbia College, the School of Education, and the School of Government, the Campus

Division makes available programs leading to the degree of Bachelor of Arts, with majors in the liberal arts and sciences, and in various subject-matter fields in education and government. Students selecting these majors must satisfy the prerequisite course requirements prior to admission to candidacy or take them as additional work after being admitted.

Armed Forces Section

The Armed Forces Section of the Campus Division was established for those service personnel who wish to study full-time at the University and who have only a limited time under military orders in which to complete their programs of study. Such students register for campus courses through the College of General Studies and remain under its administrative and academic control. By permission of the Dean they may enroll in appropriate courses in the Off-Campus Division.

Military and naval personnel are eligible for admission to this section of the Campus Division if they meet the following requirements:

1. The applicant must be in attendance under official orders which give him a specified time in which to finish his degree requirements.
2. He must prove that the degree requirements can be completed in the time specified in his orders only by taking advantage of the advanced standing provisions of this College.
3. He must be in a position to enroll for full-time study.

By special arrangements with the Department of the Navy, a naval section of the Armed Forces Section has been established. All naval personnel attend the University as full-time students, ordinarily for five semesters.

The Air Force Advanced Management Program, sponsored by the United States Air Force Institute of Technology, provides 50 semester hours of work in advanced management and supporting fields through the educational facilities of the School of Government for a selected group of Air Force officers. Those officers who qualify, by a combination of academic background and the satisfactory completion of this program can be awarded a Bachelor's degree by the College of General Studies.

Regulations

Students in the Campus Division of the College of General Studies are subject to and are expected to familiarize themselves with the regulations of the University as stated on pages 19-29 and 50-58, as modified in the separate catalogue of the College of General Studies.

DIVISION OF COMMUNITY SERVICES

This Division was organized to provide needed auxiliary educational services and to promote programs designed to supplement the formal educational offerings of the University.

Noncredit courses in a wide variety of subject fields are set up at the request of any interested group. There are no entrance requirements. The length of each course is determined by the wishes of the sponsoring group and the nature of the subject to be studied.

The George Washington University Reading Clinic offers both diagnostic and corrective work for small groups or individuals and reading improvement techniques for small classes. All courses are designed to meet particular individual needs whether on a remedial basis or for accelerated reading comprehension. (See page 229.)

For complete information concerning the College of General Studies, see the separate catalogue which is available upon request to the College of General Studies, 706 Twentieth Street NW.

FEES

The tuition fee for off-campus credit courses is \$16 a semester hour for campus courses, \$22 a semester hour. The tuition fees for noncredit courses are determined by the length and nature of the course.

Fees for noncredit courses and eight-week credit courses are payable in full at the first meeting of the course. By special arrangement, payment for fifteen-week credit courses may be made in three equal installments.

THE DIVISION OF UNIVERSITY STUDENTS

Elmer Louis Kayser, Ph.D., LL.D., *Dean of the Division of University Students*

John Gage Allee, Jr., Ph.D., *Associate Dean of the Division of University Students*

THE DEAN'S COUNCIL*

Ralph Dale Kennedy

Francis Edgar Johnston

Ira Bowers Hansen

GENERAL INFORMATION

INTRODUCTORY

The Division of University Students was established in 1930. In this Division are registered mature students who wish to undertake university courses for credit either here or elsewhere or as auditors, but who are not at this time working toward degrees in this University.

REGULATIONS

Students in the Division of University Students are subject to, and are expected to familiarize themselves with, the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 19-29; the University regulations stated on pages 50-58; and the regulations concerning PROBATION AND SUSPENSION which are the same as those stated on pages 68-69 under the Junior College.

TRANSFER TO REGULAR STATUS

A "University student" may be transferred, at his request, to another college or school of the University only upon complying with the regulations of the specific college or school to which he wishes to transfer. The student should familiarize himself with the regulations printed in the University CATALOGUE concerning admission, residence, amount and quality of work. He should also specifically note the University regulations regarding transfers within the University on pages 52-53, and regarding graduation requirements on pages 54-55, and observe that when a student transfers into a degree-granting school or college, to be eligible for a degree he must meet not only all the general graduation requirements, but also such special requirements as may apply in his particular curriculum.

* The Dean of Faculties, the Dean and the Associate Dean of the Division are members of the Council.

THE DIVISION OF SPECIAL STUDENTS

Warren Reed West, Ph.D., *Dean of the Division of Special Students*

THE DEAN'S COUNCIL*

Thelma Hunt

Fred Salisbury Tupper

Albert Christian Murdaugh

GENERAL INFORMATION

INTRODUCTORY

The Division of Special Students was organized in 1944. To this Division may be admitted students who are in the process of qualifying for degree candidacy. Students in this Division are designated "special students".

REGULATIONS

Students in the Division of Special Students are subject to, and are expected to familiarize themselves with, the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 13-24 and the University regulations stated on pages 50-58.

SCHOLARSHIP

A student in this Division may be dropped for reasons of scholarship if his quality-point index falls below 2.00.

The system of grading and computing scholarship is described in detail on pages 50 and 51.

ACADEMIC SCHEDULE

The schedule of the "special student" is made up of courses required in the curriculum to which he wishes to transfer. The choice of courses must be approved by the Dean. If the student has not completed the language requirements of this curriculum at the time of his admission to the University, he must include three hours of language in each twelve-hour group of work until this requirement is met. Second- or third-group courses may not be taken unless all first-group requirements have been met or are being met concurrently.

Credits earned at other institutions are evaluated at the time of admission to this Division. They are withheld until the "special student" transfers.

* The Dean of Faculties, and the Dean of the Division are members ex officio of the Council.

fers to a degree-granting college or school, when those appropriate to his curriculum are applied toward advanced standing.

In each individual case, the schedule will be reduced when it is deemed advisable.

TRANSFER TO REGULAR STATUS

A "special student" may transfer to a degree-granting college or school of the University when he has satisfactorily completed his program in the Division of Special Students and has met the admission requirements of the college or school to which he wishes to transfer. The student should familiarize himself with regulations printed in the University CATALOGUE concerning admission, residence, amount and quality of work. He should also specifically note the University regulations regarding transfer within the University on pages 52-53 and regarding graduation requirements on pages 54-57, and observe that when a student transfers into a degree-granting school or college, to be eligible for a degree he must meet not only all the general graduation requirements, but also such special requirements as may apply in his particular curriculum.

ADVISORY SYSTEM

Students in the Division of Special Students are expected to consult with an adviser in the Office of the Dean at least once each semester. Any student who has a question in regard to his status, or whose grades are below C, or who is in academic difficulty, is urged to make an appointment promptly without waiting for a request from the Dean.

DIVISION OF AIR SCIENCE

Edward Martin Wall, A.B., LL.B., Lieutenant Colonel, United States Air Force, *Director of Air Science*

MILITARY SERVICE DELAY AND AIR FORCE ROTC ADVANCED COURSE SELECTION BOARD*

James Leo Gagnier, *Chairman*

Calvin Darlington Linton

Martin Alexander Mason

George Martin Koehl

Thomas Gudgel Martin

William Wightman Richardson III, *Recorder*

GENERAL INFORMATION

INTRODUCTORY

The Air Force Reserve Officers Training Corps (Air Force ROTC) unit was established at the University in 1951 under authority of Section 40-47C, National Defense Act of June 3, 1916, as amended. Air Force personnel, approved by the President of the University, are assigned by the Department of the Air Force to supervise and conduct the Air Force ROTC program.

The mission of the Air Force ROTC is to develop in selected university students, through a permanent program of instruction, those qualities of leadership and other attributes essential to their progression to positions of increasing responsibility as commissioned officers in the United States Air Force. Classroom instruction and leadership training are provided to develop in the student the knowledge and the attributes of character, personality, and leadership required of commissioned officers.

COURSE OF STUDY

The course of study is divided into the basic course covering the first two years and the advanced course covering the junior year, summer training unit, and senior year.

The program takes into consideration the fact that many of the academic subjects in which college students are enrolled have a direct relationship to military as well as to civilian careers. The courses of the Air Force ROTC program have been carefully selected to supplement those academic subjects. They also afford a means for practical training in organization, leadership, and discipline, which will be of value

* The President of the University, the Dean of Faculties, and the Director of the Division are members ex officio of this Board.

industrial or professional careers. The duties and responsibilities of commissioned officers, oral and written expression, and the techniques of problem solving are emphasized throughout the course both in theory and practice.

Twenty-four semester hours* of elective credit are granted for Air Science courses, 3 hours per semester for the basic course and 3 hours per semester for the Advanced Course. See "Department of Air Science" for a list of the subjects covered. In addition thereto, orientation flights and field trips to Air Force bases are available to selected cadets on a voluntary basis.

Cadets in the advanced course receive subsistence allowances from the Government totaling approximately \$500, which is exempt from income tax. During the period of summer training, cadets receive \$75 a month, food, lodging, and travel expense. Uniforms, textbooks, and training materials are provided for all Air Science courses at no expense to the cadet.

ELIGIBILITY REQUIREMENTS

Enrollment in the Division of Air Science basic course is open to all men students and a limited number of women students, who are at least 14 years of age, physically fit, of good character, and candidates for a Bachelor's degree. Men students enrolling in the basic course are required to successfully complete the two-year course as a prerequisite to graduation from the University. Upon successful completion of the basic course, a cadet may apply for enrollment in the advanced course.

A cadet enrolling in the advanced course obligates himself to successfully complete the course, and upon graduation to accept a commission, if tendered, in the United States Air Force. Any cadet who for academic, physical or other reasons becomes disqualified for a commission is relieved of this obligation. Cadets enrolled in the category leading to pilot training may be required to pursue a 35 hour course of flying instruction during the senior year. This flying instruction is provided by a Civil Aeronautics Administration approved school at government expense, and leads to qualification for a private pilot's certificate.

Both men and women students may enroll in advanced Air Science courses for elective academic credit with the approval of the Director of Air Science and the dean concerned.

MILITARY SERVICE DELAY

Deferment from induction under the Selective Service Act of 1951 may be granted to selected cadets within authorized quotas. Normally, a cadet is not considered for draft deferment until he has completed one

* The amount of elective credit applicable toward a degree varies with the curriculum concerned.

semester's work in the University, with a quality-point index of at least 2.00. A cadet's deferment is subject to withdrawal if his quality-point index falls below 2.00.

STUDENT HONORARY MILITARY SOCIETIES

The Arnold Air Society.—A national honorary military society of qualified Air Force ROTC cadets established to further the mission, traditions, and concept of the United States Air Force as a means of national defense, to promote American citizenship, and to create a close and more rewarding relationship among the Air Force ROTC cadets. The national organization founded in 1947, was named in honor of the late General of the Air Force Henry Harley Arnold. The local squadron established in 1952, was named in honor of General Carl Spaatz (retired), the first Chief of Staff of the United States Air Force. All Air Force ROTC cadets who meet the established qualifications are eligible for election to membership. Members are authorized to wear a blue and gold auguilette and ribbon on their cadet uniforms.

Pershing Rifles.—A national honorary military society founded in 1894 by Lieutenant (later General of the Armies) John Joseph Pershing. Its purpose is to encourage, preserve, and develop the highest ideals of the military profession, promote American citizenship, create a closer and more efficient relationship, and provide appropriate recognition of a high degree of cadet achievement. Only basic ROTC cadets are eligible for election to membership. Members are authorized to wear a blue and silver cord and ribbon on their cadet uniforms.

Flying Sponsors.—A local women's honorary organization established in 1952 to sponsor Air Force ROTC activities.

REGULATIONS

Cadets and students in the Division of Air Science are subject to and are expected to familiarize themselves with the University regulations stated on pages 13-29 and 50-58; the regulations of the college, school, or division in which enrolled; and the regulations of the United States Air Force pertaining to Air Force ROTC cadets. Individual copies of Cadet Regulations are issued upon enrollment.

THE SUMMER SESSIONS

Burnice Herman Jarman, A.M., Ed.D., *Dean of the Summer Sessions*

THE DEAN'S COUNCIL*

Wood Gray

Ira Bowers Hansen

During the summer of 1959 the University offers an eight-week session for undergraduate and graduate students in the Arts and Sciences. The Law School offers work in two six-week sessions. The School of Education offers a special six-week session for teachers, with a presession of three weeks, post-session of three weeks, and a twelve-week evening session.

During the summer of 1959, courses are offered in the Junior College, Columbian College (the senior college), the Law School, the School of Engineering, the School of Pharmacy, the School of Education, the School of Government, and the College of General Studies.

For a complete statement concerning summer-term work, see the Summer Sessions catalogue.

*The Dean of Faculties, the Dean of the Summer Sessions, are members ex officio of the Council.

ADMINISTRATIVE UNITS

HEALTH ADMINISTRATION

Richard Bernard Castell, A.B., M.D., *University Physician, Director*
Benjamin Franklin Dean, Jr., M.D., M.S., *University Surgeon*
Herbert Lamont Pugh, B.S., M.D., *University Physician*
Margaret Elizabeth Callan, A.B., M.D., *Associate University Physician*
Robert Howe Harmon, A.B., M.D., *Associate University Physician*
Ronald Atmore Cox, A.B., M.D., *Associate University Physician (Eye)*
Alfred Brigulio, M.D., *Associate University Physician*
Hugh Osgood House, A.B., M.D., *Associate University Physician (Nose and Throat)*
Jerome Blaine Harrell, M.D., *Associate University Surgeon*
Beatrice McBride, R.N., *Nurse-Secretary*

The University maintains a health service that is primarily diagnostic in its intent. For medical emergencies and health consultations there is, on the Campus, a Student Health Clinic open from 9:00 A.M. to 5:00 P.M. with physician and nurse in attendance. There is also a rest room for women, with a graduate nurse in charge.

Medical privileges include: (1) the physical examination of every student entering from secondary school;* (2) three visits by the University physician or surgeon, office or residence (District of Columbia), in any one illness, exclusive of a specialist, surgical operation, laboratory, or X-ray examination; (3) hospitalization, including board and nursing, in the University Hospital for not more than one week during any twelve-month period—the necessity to be determined by the Director of Health Administration. All additional hospital charges for operating room, laboratory, anesthetics, X-ray, medications, or any other special service must be paid by the student. The duration of hospitalization period (maximum, one week) is also to be determined by the Director of Health Administration.

This medical benefit does not apply to illness or disability incurred previous to the University term or prior to payment of tuition fees.

The student is allowed, if he so desires, to engage physicians and nurses of his own choice, but when he does so he will be responsible for the fees charged.

Rules: (1) The Director of Health Administration is empowered to limit or deny the medical benefits where, in his discretion, a student has, by his misconduct or breach of the rules of the University, made himself ineligible; (2) the Director of Health Administration has authority

* A charge of \$2 for a special physical examination is made by the University if a student fails to appear for a physical examination during the period set for this purpose.

to determine the necessity and length of hospitalization; (3) a student who has severed his connection with the University is ineligible for medical benefits; (4) a student intending to train for an athletic team is required to pass a thorough examination at the beginning of each semester; (5) the above regulations apply also during the summer term of the University.

The University is not responsible for injuries received in intercollegiate or intramural games, or in any of the activities of the physical education departments.

VETERANS EDUCATION

Don Carlos Faith, Ph.D., *Director of Veterans Education*

The George Washington University is approved to provide training for eligible persons under the provisions of Public Laws 346, 16, 550, 894, and 634. The Office of Veterans Education, Building Q, 2029 H Street, NW., operates as a service bureau for such persons interested in studying at the University and acts in a liaison capacity between the University and the Veterans Administration.

Eligible persons are advised to consult this Office concerning the educational program of the University and the procedure for securing Veterans Administration educational benefits before applying to the Veterans Administration for certification. The Veterans Administration is on Constitution Avenue at Twentieth Street NW., Washington 25, D.C.

PUBLIC LAW 634

(War Orphans' Educational Assistance Act)

A child of a person who died of a disease or injury incurred or aggravated while on active duty in the Armed Forces during World War I, World War II, or the Korean Conflict may be eligible for educational assistance under this Act, if certain age requirements are met. In the case of a child who has not reached the age of majority, his guardian must make application for him to the Veterans Administration. For further information concerning eligibility or benefits available under this Law, consult the University Office of Veterans Education or the Veterans Administration.

PUBLIC LAW 346

(World War II GI Bill)

The educational benefits for veterans under Public Law 346 terminated July 25, 1956, except as described below.

The Armed Forces Voluntary Recruitment Act of 1945 (Public Law 190) provided that persons enlisting or reenlisting in the Armed Forces between October 6, 1945, and October 5, 1946, may count the entire period of such enlistment or reenlistment as war service for purposes of GI Bill benefits. Such enlistees have four years from the date that enlistment ended to begin training and nine years from that separation date to complete training under this provision.

It is suggested that a veteran having any question regarding his eligibility consult the University Office of Veterans Education or the Veterans Administration.

PUBLIC LAW 550**(Korean GI Bill)**

In order to be eligible for the benefits under this Law, a veteran must have been in service between June 27, 1950 and January 31, 1955, and must no longer be on active duty.

At least thirty days prior to registration the veteran wishing to attend under this Law should apply to the Veterans Administration for a Certificate for Education and Training, for presentation to the University Office of Veterans Education at the time of registration. A photostatic copy of his DD214 must accompany the original application for certification.

PUBLIC LAWS 16 AND 894**(Vocational Rehabilitation)**

Disabled veterans desiring vocational rehabilitation under either Law should apply to the Veterans Administration for approval of their training objectives at least sixty days prior to registration.

SERVICE SCHOOL CREDITS

A limited amount of credit earned in service schools since 1941 may be considered for assignment to qualified degree candidates in accordance with faculty regulations of the Junior College, Columbian College, the School of Engineering, and the School of Government. To be considered for such credit, veterans should submit to the Director of Admissions photostatic copies of their service school records, indicating courses successfully completed with sufficient identification of the course to locate it in the Guide to Evaluation of Educational Experience in the Armed Forces.

COMMUNITY AND UNIVERSITY SERVICES

THE READING CLINIC

Mary Ellen Coleman, A.M., *Director of the Reading Clinic*

The Reading Clinic, 2018 I Street NW., offers individual diagnostic and corrective services for all levels: primary, elementary, secondary, and adult. In addition special reading improvement classes are conducted on the high school and adult level.

A complete diagnosis includes psychological tests; vision, hearing, and dominance tests as well as the various reading and spelling tests. Results are interpreted and a written report is presented in conference with the parents or the individual.

The special reading classes for high school students and adults are offered throughout the year at stated intervals. Emphasis is placed on improvement of vocabulary, speed, comprehension, and study skills. Machines such as the tachistoscope, rate accelerator, and controlled reader are also used for increasing speed of comprehension.

Fees.—The fee for individual diagnosis is \$30; for individual instruction, \$4 a lesson; for semi-individual instruction, \$3 a lesson; for instruction in small groups with common reading difficulties, \$2.50 a lesson; for materials, \$4. All fees are payable in advance at the Office of the Cashier.

THE SPEECH CLINIC

Calvin Weir Pettit, Ph.D., *Director of the Speech Clinic*

The Speech Clinic, Lisner Auditorium, 730 Twenty-first Street NW., offers diagnostic and corrective work for children and adults with such speech difficulties as stuttering, lisping, cleft palate, cerebral palsy, aphasia, foreign accent, voice, and articulatory problems.

Fees.—There is no charge for the diagnosis. The fee for individual instruction is \$7 an hour; for group instruction, \$4 an hour. Fees are payable at the Office of the Cashier.

THE TESTING AND COUNSELING CENTER

Elmer Roland Ritzman, A.M., *Director of the Testing and Counseling Center*

The Testing and Counseling Center, 718 Twenty-first Street NW., offers services which are available to students enrolled in the University, to high school students, and to adults of the community.

The services are designed to: assist individuals in the evaluation of their educational and vocational potentialities and objectives; diagnose academic difficulties; provide educational and vocational literature and information; and refer individuals to qualified agencies for assistance with problems not handled by the Center.

Fees.—Except for specialized testing, the fee covers testing and counseling based on the results of the tests. For students who are currently registered as degree candidates in the University, the fee is \$7.50; for students currently enrolled in the University but not as degree candidates, the fee is \$30; for graduates of The George Washington University, \$30; for community clients under twenty-one years of age, \$35; for community clients twenty-one or over, \$45. Fees for specialized testing are dependent upon the services involved. All fees are payable at the Office of the Center.

COURSES OF INSTRUCTION

COURSES OF INSTRUCTION

On the following pages of this CATALOGUE, under the alphabetically arranged names of the departments of instruction, are listed the courses of instruction offered by the University in the summer of 1959 and in the academic year 1959-60. The courses as here listed are subject to some slight change. The University reserves the right to withdraw any course announced.

HOURS OF INSTRUCTION

Courses of instruction are scheduled in the morning, afternoon, and evening. Evening classes are identical with daytime sections of corresponding courses, are taught by the same instructors, and carry the same amount of credit. By taking the evening and summer classes and extending the time of study beyond the customary four years, a student who is able to give only part of his time to college work may complete a regular curriculum and obtain a degree.

EXPLANATION OF COURSE NUMBERS

In the departments of the School of Medicine, first-year courses are numbered from 101 to 200; second-year courses, from 201 to 300; third-year courses, from 301 to 400; and fourth-year courses, from 401 to 500. This includes courses open to both medical and nonmedical students. Courses limited to nonmedical students follow the numbering system used in "all other schools and colleges" (see below).

In the Law School, first-year courses are numbered from 100 to 200; second-year courses, from 201 to 300; third-year courses, from 301 to 400; and graduate courses, from 401 to 500.

In all other schools and colleges the following system of numbering is used:

First-group courses.—Courses numbered from 1 to 100 are planned for students in the freshman and sophomore years. With the approval of the adviser and the dean, they may also be taken by juniors and seniors. In certain instances, they may be taken by graduate students to make up undergraduate deficiencies or as prerequisite to advanced courses, but they may not be credited toward a higher degree.

Second-group courses.—Courses numbered from 101 to 200 are planned for students in the junior and senior years. They may be credited toward higher degrees only when registration for graduate credit has been approved at the beginning of the course by the dean responsible for

the graduate work and by the officer of instruction, and when the completion of additional work has been certified by the officer of instruction.

Third-group courses.—Courses numbered from 201 to 300 are planned primarily for graduate students. They are open, with the approval of the officer of instruction, to qualified seniors; they are not open to Junior College students or other undergraduates.

INDICATION OF THE AMOUNT OF CREDIT

The number of semester hours of credit given for the satisfactory completion of a course is, in most cases, indicated in parentheses after the name of the course. Thus, a year course giving 3 hours of credit each semester is marked (3-3), and a semester course giving 3 hours of credit is marked (3). A semester hour usually consists of the completion of one fifty-minute period of class work or of one laboratory period a week for one semester.

ACCOUNTING

Ralph Dale Kennedy, Ph.D., *Professor of Accounting, Executive Officer*
 Orton Wells Boyd, A.M., C.P.A., *Professorial Lecturer in Accounting*
 Edwin Lewis, M.B.A., *Professorial Lecturer in Accounting*
 Forest Carlyle Brimacombe, M.B.A., *Professorial Lecturer in Accounting*

Ira Ernest Steele, A.M., *Professorial Lecturer in Accounting*

James Leonard Buckler, A.M., *Professorial Lecturer in Accounting*

Fernand Vincent Demaret, M.S., *Professorial Lecturer in Accounting*

Frank Higginbotham, M.S., C.P.A., *Professorial Lecturer in Accounting*

Frederick Charles Kurtz, M.B.A., C.P.A., *Associate Professor of Accounting*

Wilbur Earle Benson, M.B.A., *Assistant Professor of Accounting*

Earl Elton Pontius, Jr., M.B.A., *Assistant Professor of Accounting*

Associate in Arts (Junior College)—Two-year vocational curriculum in Accounting.—For curriculum see page 76.

Bachelor of Arts and Master of Arts in Government with a major in Accounting (School of Government).—See pages 68-70, 74, 194, 198, and 200-201, 203.

FIRST GROUP

1-2 *Introductory Accounting (3-3)*

The Staff

First half: fall—morning and evening; spring—morning and evening; summer 1959. *Second half:* fall—morning and evening; spring—morning and evening; summer 1959.

First half: basic principles underlying accounting records used by single proprietorships and partnerships; preparation of the work sheet and financial statements. *Second half:* basic principles underlying accounting records used by corporations; introduction to cost accounting; analysis of financial statements; and valuation and amortization problems. Prerequisite to Accounting 2: Accounting 1 or permission of the instructor.

3 *General Accounting (3)*

Not offered 1959-60.

Study of accounting systems used by single proprietorships and corporations, with emphasis on accounting theory, terminology, and the analysis and interpretation of accounting data.

SECOND GROUP

101 *Cost Accounting* (3)

Pontius

Fall—morning and evening; summer 1959.

Theory and purposes of industrial cost accounting; treatment of systems of cost control and determination; and analysis and interpretation of cost data. Prerequisite: Accounting 1-2.

102 *Advanced Cost Accounting* (3)

Pontius

Spring—evening.

Advanced cost accounting theory and problems with emphasis on development and analysis of standard costs, the use of cost data for managerial control, and distribution cost accounting. Prerequisite: Accounting 101 or permission of the instructor.

111 *Financial Statement Analysis* (3)

Kennedy, Steele

Fall—morning; spring—evening; summer 1959.

Methods and techniques of preparing, analyzing, and interpreting financial statements for the guidance of operating executives, directors, stockholders, and creditors; influence of price level changes on accounting data; determination and interpretation of trends and ratios. Prerequisite: Accounting 1-2 or permission of the instructor.

115 *Survey in Accounting* (3)

Fall—evening.

Accounting systems used by single proprietorships and corporations with emphasis on methods of compiling, analyzing, classifying, and summarizing accounting data; the use of accounting information in the management process; introduction to cost accounting, commercial budgeting, and interpretation of financial statements. Not open for credit to Accounting or Business Administration majors.

121-22 *Intermediate Accounting* (3-3)

Benson, Higginbotham

Academic year—morning and evening.

First half: valuation and amortization problems of current assets, long-term investments, tangible fixed assets, intangible assets, and deferred charges; accounting for current, noncurrent contingent, and estimated liabilities. Prerequisite to 121: Accounting 2 or permission of the instructor. *Second half:* accounting for the organization, financial operation, and dissolution of corporations and partnerships; basic principles of consignment and installment sales. Prerequisite to 122: Accounting 121 or permission of the instructor.

132 *Accounting Theory* (3)

Kennedy, Kurtz

Spring—morning; summer 1959.

Development of basic accounting principles and concepts with special reference to current thought expressed by the American Institute of

Certified Public Accountants and the American Accounting Association. Prerequisite: 6 hours of accounting.

141 Governmental Accounting (3)

Lewis

Fall—evening.

Problems relating to governmental appropriation accounts encumbrances, and fund accounting. Emphasis on municipal and state government accounting with an introduction to federal accounting. Prerequisite: Accounting 1-2 or permission of the instructor.

144 Accounting in the Federal Government (3)

Lewis

Spring—evening.

Accounting procedures in the Federal Government, with emphasis on agency level accounts, implementation of a crude expenditure legislation, and accounting support for cost-based budgets. Accounts of the United States Treasury; current concepts of allotment, obligation, and disbursement accounting and reporting. Prerequisite: Accounting 141 or four semesters of accounting.

161 Income Tax Accounting (3)

Kurtz, Boyd

Fall—morning and evening.

Problems involved in the federal income taxation of individuals and corporations, differences between tax accounting and financial accounting, social security taxes. Prerequisite: Accounting 1-2.

162 Federal Tax Practice (3)

Kurtz, Boyd

Spring—morning and evening.

Advanced problems of federal tax practice such as the tax treatment of partnerships, estates, trusts, corporate reorganizations, foreign income, and gifts; use of the tax services; assessment, collection, and refund procedures. Prerequisite: Accounting 161 or the permission of the instructor.

171 Auditing (3)

Pontius

Fall—evening.

Duties and responsibilities of auditors; principles and procedures of making audits, techniques of verifying each financial statement item, preparation of audit working papers and reports. Prerequisite: Accounting 121-22.

172 Auditing Practice (3)

Pontius

Spring—evening.

Preparation of audit reports, accounting statements to be filed with Securities and Exchange Commission, and current developments of auditing standards and practice. Prerequisite: Accounting 171 or permission of the instructor.

181 *Accounting Systems* (3)

Lewis

Fall—evening.

Theory and procedure of designing and installing accounting systems for collecting, recording, analyzing, and presenting accounting data.

Prerequisite: Accounting 181, 121-22, and 171, or permission of the instructor.

191 *Advanced Accounting* (3)

Steele

Fall—evening.

Consolidated statements, statement of affairs, realization and liquidation reports, and estate and trust accounting. Prerequisite: Accounting 121-22.

193 *Business Budgeting* (3)

Buckler, Brimacombe

Fall—morning; spring—evening; summer 1959.

Principles, techniques, and procedures involved in the development, installation, and operation of a system of budgetary control to aid in the management of commercial and industrial organizations. Prerequisite: Accounting 1-2.

194 *Business Budgeting: Practice and Problems* (3)

Not offered 1959-60.

Practical application of budget principles and techniques; advanced problems involved in general budgetary administration for management control purposes in commercial and industrial business. Prerequisite: Accounting 193 or permission of the instructor.

198 *Professional Accounting Review* (3)

Lewis

Spring—evening.

Review and coordination of the principles and techniques developed in the accounting curriculum, in preparation both for general practice in the field of accountancy and for professional accounting examinations. Prerequisite: Accounting 101, 141, 162, 171, and 191, or permission of the instructor.

THIRD GROUP

211-12 *Managerial Accounting* (3-3)

Kennedy, Benson

First half: not offered 1959-60. *Second half:* spring—evening, summer 1959.

First half: analysis of the accounting system with special reference to the use of financial and operating records and accounting reports as tools of management; a study of valuation and amortization problems including the influence of price level changes on accounting data. Prerequisite: Accounting 1-2 or 3. *Second half:* a survey of internal accounting controls, commercial budgets, and cost accounting systems.

used by management in directing and controlling a business. Prerequisite to Accounting 212: Accounting 211 or permission of the instructor.

231 Contemporary Accounting Theory (3) Kennedy

Not offered 1959-60.

Advanced accounting principles and concepts and recent theories concerned with the valuation of assets and determination of income. Admission by permission of the instructor.

246 Governmental Accounting and Budgeting Problems (3)

Not offered 1959-60.

Advanced principles and practices in federal accounting relationship to general policy and administration. Prerequisite: Accounting 144 or permission of the instructor.

275 Internal Control and Auditing (3) Kurtz

Summer 1959.

Internal accounting controls; review and appraisal of accounting systems, procedures, and managerial policies with respect to their effectiveness and profitableness. Emphasis on the use of internal control and auditing as an aid to management. Prerequisite: Accounting 171 or permission of the instructor.

295-96 Seminar in Accounting (3-3) Kennedy

First half: fall—evening. Second half: not offered 1959-60.

Selected accounting research topics and problems; individual oral and written reports. Admission by permission of the instructor.

299-300 Thesis (3-3) The Staff

Academic year—as arranged; summer 1959.

COURSES OFFERED IN SPECIAL PROGRAMS

In addition to the regular courses announced above, the University offers the following accounting courses for students enrolled in the following special programs: Navy Graduate Comptrollership Program, Air Force Advanced Management Program, and Engineering Administration.

3 General Accounting (3)

204 Survey of Cost Accounting (2)

211-12 Managerial Accounting (3-3)

275 Survey of Internal Control and Auditing (2)

293 Budget Preparation and Control (3)

AIR SCIENCE

Edward Martin Wall, A.B., LL.B., Lieutenant Colonel, United States Air Force, *Professor of Air Science, Executive Officer*
 James Leo Gagnier, A.B., LL.B., Major, United States Air Force, *Assistant Professor of Air Science*
 Thomas Gudel Martin, A.B., Captain, United States Air Force, *Assistant Professor of Air Science*
 William Wightman Richardson III, A.B., Captain, United States Air Force, *Assistant Professor of Air Science*
 Harold Lee Frakes, Master Sergeant, United States Air Force, *Instructor in Air Science*
 Gerald Cleveland Purcell, Technical Sergeant, United States Air Force, *Instructor in Air Science*
 Anthony Nassner, Technical Sergeant, United States Air Force, *Instructor in Air Science*
 Allen Olavi Kevari, Staff Sergeant, United States Air Force, *Instructor in Air Science*

Commission in the United States Air Force Reserve.—Upon being awarded a Bachelor's degree and upon the satisfactory completion of the Air Force ROTC course of instruction prescribed by law and regulations, the graduate will be appointed Second Lieutenant, United States Air Force Reserve.

BASIC COURSE

1-2 Leadership Laboratory—Freshman Year (1-1) The Staff

Academic year—afternoon.

Cadet basic airman training. Military courtesy, discipline, appearance and bearing; element flight squadron, and mass formation; parades and ceremonies. Minimum 15 hours a semester. Laboratory fee, charged one time a year, \$3. (May be substituted for Physical Education 1-2.)

11-12 Leadership Laboratory—Sophomore Year (1-1) The Staff

Academic year—afternoon.

Cadet noncommissioned officer training. Military bearing and courtesy, all phases of drills and ceremonies, command voice training, command responsibility. Prerequisite: Air Science 1-2 and Air Science 21-22 for men and Air Science 1-2 for women. Minimum 15 hours a semester. Laboratory fee, charged one time a year, \$3. (May be substituted for Physical Education 11-12.)

21 *Air Science—Freshman Year (2)*

Richardson

Fall: 2 hours a week—morning and afternoon.

Foundations of Air Power. General survey of air power designed to provide the student with an understanding of the elements and potentials of air power. Fundamentals of air power; military air powers of the world, military research and development, air vehicle industries; air lines and airways; general aviation; elements of an aircraft and aerodynamics.

22 *Air Science—Freshman Year (2)*

Richardson

Spring: 2 hours a week—morning and afternoon.

Foundations of Air Power. General survey of air power to include control, navigation, and propulsion systems; space vehicles; military instruments of national security; and professional opportunities in the United States Air Force.

51 *Air Science—Sophomore Year (2)*

Martin

Fall: 2 hours a week—morning and afternoon.

Foundations of Air Power. General survey of the roots and development of aerial warfare emphasizing the principles of war, concepts of employment of forces, and the impact of changing weapon systems. Treatment of aerial warfare is undertaken to include targets and weapons.

52 *Air Science—Sophomore Year (2)*

Martin

Spring: 2 hours a week—morning and afternoon.

Foundations of Air Power. Treatment of aerial warfare is continued including aircraft and missiles, bases and facilities, and operations.

ADVANCED COURSE

101 *Air Science—Junior Year (3)*

Gagnier

Fall: 4 hours a week—morning.

Air Force Officer Development. Knowledge and skills required of a junior officer in the Air Force. Staff organization and functions, communicating, instructing, and techniques of problems solving.

102 *Air Science—Junior Year (3)*

Gagnier

Spring: 4 hours a week—morning.

Basic psychology of leadership, the military justice system, and application of problem solving techniques and leadership theory to simulated and real Air Force problems.

103-4 Leadership Laboratory—Junior Year The Staff
 (Credit is a part of Air Science 101 and 102)

1959-60 and alternate years: academic year—afternoon.

Cadet noncommissioned officer and officer training. Wearing of the uniform, parades and ceremonies, commands and command voice. Cadets perform duties involving planning for and supervision of Cadet Corps activities. Emphasis placed on leadership and management proficiency. Minimum 15 hours a semester.

105 Summer Training Unit—Between Junior and Senior Years (required) The Staff

Attendance at a four-week Air Force ROTC summer training unit at an Air Force base within continental United States is mandatory. Program consists of familiarization flying, physical training, individual weapons, Air Force base activity and equipment, field exercises, air base problems, and leadership training.

151-52 Air Science—Senior Year (3-3) Gagnier

1960-61 and alternate years.

Leadership and management seminar; military aviation and the evolution of warfare; military aspects of world political geography; briefing for commissioned service.

153-54 Leadership Laboratory—Senior Year The Staff
 (Credit is a part of Air Science 151-52)

1960-61 and alternate years.

Cadet officer training. Cadet officers conduct activities of Corps of Cadets through chain of command, instruct subordinates, plan and supervise Cadet Corps training and administration. Preparation for commissioned officer duties. Development of leadership and managerial responsibilities. Minimum 15 hours per semester.

ANATOMY

*Ira Rockwood Telford, Ph.D., *Professor of Anatomy, Executive Officer*
 Paul Calabrisi, Ph.D., *Professor of Anatomy*
 Thomas Dale Stewart, A.B., M.D., *Professorial Lecturer in Anatomy*
 Frank Duane Allan, Ph.D., *Associate Professor of Anatomy*
 Thomas Nick Johnson, Ph.D., *Associate Professor of Anatomy*
 Lloyd Eugene Church, D.D.S., M.S., *Clinical Instructor in Anatomy*
 Raymond Nathan Brown, M.D., *Clinical Instructor in Anatomy*

SPECIAL LECTURERS

Webb Edward Haymaker, M.D., M.S., *Chief, Neuropathology Section, Armed Forces Institute of Pathology; Neuroanatomy*
 Joseph Vitold Michalski, Ph.D., *Anatomist, Armed Forces Institute of Pathology; Anatomy*

Master of Science in the field of Anatomy (Columbian College).—Prerequisite: a Bachelor of Arts or Bachelor of Science degree from this University, or the equivalent, with a major in Biology, Chemistry, or Zoology. The undergraduate program must include the following courses, or the equivalent: Chemistry 11-12, 21, 151-52; Physics 11, 12; Zoology 1-2, 41-42. Biochemistry 221-22 is recommended as an elective.

Required: the general requirements of Columbian College as stated on pages 91-95. The thirty semester hours of graduate work must include Anatomy 203, 204, 205, 221-22, 295-96, 299-300, and graduate courses in biochemistry, physiology, or related fields selected with the approval of the Department. It is not always possible to arrange courses and research so that the student can be assured of completing all the required work in one academic year.

Doctor of Philosophy (Graduate Council).—See page 105.

101-2 Gross Anatomy

Calabrisi and Staff

Academic year: fall—12 hours a week; spring—8½ hours a week.

Regional dissection of the human body, supplemented with lectures and quiz sections. Study of X-ray anatomy to emphasize the functional aspects of the position, shape, and relation of the viscera and skeletal components.

103 Human Embryology

Allan and Staff

Fall—3 hours a week.

The origin and development of the human body. Special emphasis on the value of embryology in interpreting anatomical anomalies and variations as seen in gross dissection, surgery, obstetrics, and pathology.

* On sabbatical leave spring semester 1959-60.

104 *Neuroanatomy*

Johnson and Staff

Spring—5½ hours a week.

The macroscopic and microscopic study of the central nervous system and the special sense organs. Emphasis on such dynamic aspects as development, pathways, lesions, etc.

105 *Microscopic Anatomy*

Telford and Staff

Fall—9 hours a week.

Study of the detailed minute structure of cells, tissues, and organs of the human body, with emphasis on the relation of structure to function. Recognition and interpretation of histological sections tested by practical examinations.

106 *Living Anatomy*

The Staff

Spring—1 hour a week.

An introduction to physical diagnosis, with special emphasis on topographical anatomy.

201-2 *Gross Anatomy (6-4)*

Calabrisi and Staff

Academic year—as arranged.

For qualified nonmedical graduate students. Same as Anatomy 101-2. Anatomy 201—laboratory fee, \$21; Anatomy 202—laboratory fee, \$16.

203 *Human Embryology (2)*

Allan and Staff

Fall—as arranged.

For qualified nonmedical graduate students. Same as Anatomy 103. Laboratory fee, \$8.

204 *Neuroanatomy (3)*

Johnson and Staff

Spring—as arranged.

For qualified nonmedical graduate students. Same as Anatomy 104. Laboratory fee, \$13.

205 *Microscopic Anatomy (4)*

Telford and Staff

Fall—as arranged.

For qualified nonmedical graduate students. Same as Anatomy 105. Laboratory fee, \$13.

221-22 *Seminar (1-1)*

Allan and Staff

Academic year; 1 hour a week—as arranged.

Research or reports and discussions of special topics by the Staff for graduate students. For graduate students. Medical students are encouraged to attend.

249-50 *Introduction to Medical Research (3-3) The Staff**

Academic year—Sat. 8:00 A.M. to 1:00 P.M.

Primarily for graduate students. A comprehensive introduction to the major medical research techniques—statistical, physical, chemical, electrical, and radioisotopic—as applied to biological materials in the medical sciences. Laboratory fee, \$7.50 a semester.

295-96 *Research* (arr.) The Staff

Academic year—as arranged.

Fees to be arranged.

299-300 *Thesis* (3-3) The Staff

* This is an interdepartmental course. The student should register in the department directing his research.

ANESTHESIOLOGY

Charles Seymour Coakley, M.D., *Professor of Anesthesiology, Executive Officer*
 Donald Harrison Stubbs, A.M., M.D., *Clinical Professor of Anesthesiology*
 Seymour Alpert, A.B., M.D., *Associate Professor of Anesthesiology*
 Cunningham Ramsey MacCordy, M.D., *Assistant Professor of Anesthesiology*
 Solomon Naphtali Albert, A.B., M.D., *Assistant Clinical Professor of Anesthesiology*
 Paula Reines Kaiser, M.B., Ch.B., M.D., *Associate in Anesthesiology*
 Ruth Auguste Vankai, M.D., *Instructor in Anesthesiology*
 William Eldridge Bageant, M.D., *Clinical Instructor in Anesthesiology*
 Allen Widome, M.D., *Clinical Instructor in Anesthesiology*
 Charles Gruenwald, A.B., M.D., *Clinical Instructor in Anesthesiology*

320 *Anesthesiology*

Spring—1 hour a week.

The fundamentals of anesthesia are reviewed and correlated with other medical specialties.

421-22 *Anesthesia Seminar*

Academic year—1 hour a week.

Students attend anesthesia seminars during their surgical clinical clerkships. University Hospital.

433-34 *Advanced Anesthesiology*

Academic year—as arranged.

Students are rotated through the work of the department for a period of two weeks and assigned to work in the operating rooms, attend conferences and seminars. For the more advanced student, a three-week elective is offered.

ART

Donald Chenoweth Kline, B.Arch., M.F.A., *Professor of Art, Executive Officer*

Grose Evans, B.F.A., Ph.D., *Professorial Lecturer in Art*

Henri Dorra, Ph.D., *Professorial Lecturer and Coordinator of Museology*

Laurence Pereira Leite, A.M., *Associate Professor of Art*

Edmund Archer, *Studio Lecturer on Painting*

Lester Cooke, M.F.A., Ph.D., *Studio Lecturer on Painting*

Richard Lahey, *Studio Lecturer on Painting*

Jessalee Sickman, A.B., *Studio Lecturer on Painting*

Edward Forrest Walton, *Studio Lecturer on Commercial Art*

Heinz Warneke, *Studio Lecturer on Sculpture*

Bachelor of Arts with a major in (1) Art History and Theory, (2) Drawing and Painting, (3) Sculpture, or (4) Commercial Art (Columbian College—Departmental):

The major in Art History and Theory.—Prerequisite: the Arts and Letters curriculum in the Junior College, or the equivalent, including Art 31-32 and 71-72, see page 70.

Required: in addition to the general requirements stated on pages 85-91, twenty-four semester hours, as follows: Art 101, 102, 105, 106, 109, 110, 161-62; and six semester hours selected from Art 141, 142, 151, or from third-group courses open to undergraduates with the approval of the instructor.

The major in Drawing and Painting, Sculpture, or Commercial Art.—Prerequisite: the Arts and Letters curriculum in the Junior College, or the equivalent, including Art 21-22, and 31-32 or 71-72.

Required: in addition to the general requirements stated on pages 85-91, twenty-four semester hours of studio practice; six semester hours of art history selected from second-group courses or from third-group courses open to undergraduates with the approval of the instructor.

Classes in the practice of art are held at the Corcoran School of Art.

Bachelor of Arts in Education with a teaching field in Art (School of Education).—Prerequisite: the Education curriculum, pages 72-73.

Required: the Art option, page 171, and professional courses on page 178.

Master of Arts in the field of Art History and Criticism (Columbian College).

—Prerequisite: the degree of Bachelor of Arts with a major in Art History and Theory at this University, or the equivalent.

Required: the general requirements of Columbian College as stated on pages 91-95. As much as possible of the twenty-four semester hours in course work should be in third-group courses. A general written examination on the problems in the field of Art History and Criticism; a written thesis embodying the results on some specific topic in the history and criticism of art.

Master of Arts in the field of Museology (Columbian College).—Prerequisite: the degree of Bachelor of Arts with a major in Art History and Theory at this University, or the equivalent.

Required: the general requirements of Columbian College as stated on pages 91-95. Twelve semester hours in museum courses: Art 151, 252, 271, 272;

twelve semester hours divided between courses in art history and courses in related fields outside the Department of Art; a general written examination in the field of museology; a written thesis embodying the results of research on some specific aspect of museums or museum work.

Master of Fine Arts in the field of Painting or of Sculpture (Columbia College).—Prerequisite: the degree of Bachelor of Arts with a major in Drawing and Painting, Sculpture, or Commercial Art at this University, or the equivalent.

Required: the general requirements of Columbia College as stated on pages 91-95. As much as possible of the twenty-four semester hours in course work should be in third-group courses. A creative thesis in painting or sculpture, a paper discussing some technical phase of the problem illustrated by the thesis.

Special Nondegree Program in Museum Training.—In collaboration with the museums of the Washington area, The George Washington University offers a two-year program for students wishing museum training but not interested in working for a Master's degree. The work of the program, which is under the direction of the Department of Art, is conducted almost entirely in museums and includes Art 151, 252, 271, and 272. For detailed information, consult the Executive Officer of the Department of Art.

ART HISTORY AND THEORY

FIRST GROUP

1 Art Appreciation (3)

Fall—morning; summer 1959.

A consideration of the vocabulary, methods, and materials of creative expression in the fine arts. A study of the language and function of art in its various media, the development of styles, aesthetic principles, theories, and ideals in art through the ages. (Not intended for the prospective art major.)

31-32 Survey of Art (3-3)

1959-60 and alternate years: academic year—morning; 1960-61 and alternate years: academic year—evening.

A survey of the arts from primitive beginnings to modern times.

71-72 Introduction to the Arts in America (3-3)

Academic year—morning; summer 1959—Art 71 (3).

Painting, sculpture, architecture, furniture, and the popular arts from the colonial beginnings to the present.

SECOND GROUP

101 Ancient Art (3)

Fall—morning.

The development of the forms of architecture, sculpture, painting, and the minor arts in the Ancient civilizations of Egypt, Mesopotamia, Greece, and Rome.

- 102 *Medieval Art* (3) Kline
Spring—morning.
A study of the architecture, sculpture, and painting from the formative stages of Christian Art in the Byzantine Age through the Romanesque and Gothic periods.
- 105 *Renaissance Art in Italy* (3) Leite
Fall—afternoon.
The development of painting, sculpture, and architecture in 15th and 16th century Italy.
- 106 *Renaissance Art in the North* (3) Leite
Spring—afternoon.
A study of the painting, graphic arts, and major architectural developments in England, France, the Netherlands, Germany, and Spain, during the 16th, 17th and 18th centuries.
- 109 *Nineteenth Century Art in Europe* (3) Leite
Fall—evening.
The development of European painting and sculpture from Neoclassicism and Romanticism through Impressionism.
- 110 *Contemporary Art* (3) Leite
Spring—evening.
A study of sculpture and painting from Post Impressionism through the later modern movements to the present.
- 141 *Interior Decoration* (3) Kline
1960-61 and alternate years.
A study of the principles of decoration dealing with furniture design and ensemble layout, draperies, color, accessories, and lighting.
- 142 *House Planning* (3) Kline
1960-61 and alternate years.
Study of the contemporary house for family living, including site problems, the case plan, materials of building, and climate conditioning.
- 143 *Folk Arts in America* (3) Kline
Not offered 1959-60.
Ceramics, woodcarving, ironwork, decorative painting, weaving, and other crafts; survey of American folk music.

151 *Principles of Museum Work* (3)

Dorra

Fall—evening.

An introduction to the history and development of museums; a study of the problems of museum administration, connoisseurship, cataloguing, installation, conservation, and educational service. Open to graduate students by permission of the instructor. Field trips to galleries and museums, as arranged.

161-62 *Theory and Criticism* (3-3)

Evans

Academic year—evening.

The artist on art and the history of art criticism.

THIRD GROUP

203 *Primitive Art** (3) (Formerly Art 143)

Kline

1959-60 and alternate years: fall—evening; 1960-61 and alternate years: fall—afternoon.

The arts of prehistoric and primitive man in the pre-Columbian Americas, Oceania, and Africa.

204 *Art of the Far East** (3) (Formerly Art 146)

Kline

1959-60 and alternate years: spring—evening; 1960-61 and alternate years: spring—afternoon.

The architecture, painting, and sculpture of China and Japan.

205 *Baroque Art in Italy** (3) (Formerly Art 108)

Leitch

Summer 1959 (as Art 108).

The development of painting, sculpture, and architecture in the 16th and 17th centuries in Italy.

210 *Christian Iconography** (3) (Formerly Art 107)

Leitch

Spring—morning.

The origins and development of Christian symbols and themes from Early Christian to modern times.

243-44 *Seminar* (3-3)

The Staff

Academic year—as arranged.

Special study and research in the artistic areas of Antiquity, Middle Ages, the Renaissance, Baroque Art, the Modern era, Orient, and America.

* May be taken for undergraduate credit with the approval of the instructor

252 Museum Techniques* (3)

Dorra

Spring—as arranged.

The study and observation of actual work problems in the various departments of museums and galleries. All work to be conducted in museums. Prerequisite: Art 151.

271-72 Museum Techniques* (arr.)

Dorra

Academic year—as arranged.

Assignments in intern training in museum work. Students may take this course three days a week from 9:00 A.M. to 5:00 P.M. throughout the academic year and earn 3 credits a semester; or they may take it intensively, 5 days a week from 9:00 A.M. to 5:00 P.M., and earn 6 credits in one semester. Prerequisite: Art 151, 252.

289-90 Thesis (3-3)

The Staff

Academic year—as arranged.

DRAWING AND PAINTING, SCULPTURE, AND COMMERCIAL ART†

FIRST GROUP

21-22 Basic Designs† (3-3)

Academic year—morning and evening.

Practice of the basic principles of design; creative exercise in various media to acquire the control of two- and three-dimensional form.

45-46 Drawing and Painting I—Life and Still Life (6-6)

Sickman

Academic year—morning and afternoon.

65-66 Drawing and Painting I—Life, Still Life, and Portrait (3-3)

The Staff

Academic year—morning and afternoon.

67-68 Drawing and Painting I—Life and Portrait (6-6)

Archer

Academic year—morning, afternoon, and evening.

81-82 Sculpture I (6-6)

Warneke

Academic year—afternoon and evening.

83-84 Fundamentals of Commercial Art (3-3)

Walton

Academic year—afternoon.

* Primarily for candidates for the degree of Master of Arts in the field of Museology and students in the Special Program in Museum Training.
† Art 21-22 is prerequisite to all other studio courses.

SECOND GROUP

- 125-26 *Drawing and Painting II—Life, Still Life, and Portrait* (6-6) Sickman
Academic year—morning and afternoon.
- 127-28 *Drawing and Painting II—Life and Portrait* (6-6) Archer
Academic year—morning, afternoon, and evening.
- 165-66 *Drawing and Painting II—Life and Portrait* (6-6) Lahey, Cook
Academic year—morning, afternoon, and evening.
- 179-80 *Sculpture II* (6-6) Warneke
Academic year—afternoon and evening.
Portrait-life modeling and composition in clay, plaster and wood carving.
- 181-82 *Design and Commercial Art* (3-3) The Staff
Academic year—afternoon.
- 183-84 *Commercial Art* (6-6) Walton
Academic year—afternoon and evening.
Perspective drawing; scaling; drawing of furniture, merchandise, and fashion; lettering and typography; layout; rendering techniques; production methods.
- 185-86 *Advanced Commercial Art* (6-6) Walton
Academic year—afternoon and evening.
Layout and illustrative projects in advertising campaigns; reproduction methods in black and white, half-tone mediums, and color; work portfolios.

THIRD GROUP

- 265-66 *Painting III* (6-6) The Staff
Academic year—morning, afternoon, and evening.
- 279-80 *Sculpture III* (6-6) Warneke
Academic year—afternoon and evening.
- 299-300 *Thesis* (3-3) The Staff
Academic year—as arranged

BACTERIOLOGY, HYGIENE, AND PREVENTIVE MEDICINE

Leland Wilbur Parr, Ph.D., *Professor Emeritus of Bacteriology in Residence*

Angus MacIvor Griffin, Ph.D., *Professor of Bacteriology*
Herbert Leonard Ley, Jr., M.D., M.P.H., *Professor of Bacteriology, Executive Officer*
Mary Louise Robbins, Ph.D., *Professor of Bacteriology*
Ralph Gregory Beachley, M.D., Dr.P.H., *Clinical Professor of Public Health Practice*
William Gray McCarten, M.S., *Assistant Professor of Bacteriology*
Rudolph Hugh, Ph.D., *Assistant Professor of Bacteriology*
William Donald Hann, M.S., *Associate in Bacteriology*

SPECIAL LECTURERS

Chester Wilson Emmons, Ph.D., *Chief, Medical Mycology Unit, Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health; Medical Mycology*
Willard Hull Wright, D.V.M., Ph.D., *Chief, Laboratory of Tropical Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health; Medical Zoology.*
John Roderick Heller, Jr., B.S., M.D., *Director, National Cancer Institute, National Institutes of Health; Cancer Control*
Robert Carter Cook, *Director, Population Reference Bureau; Editor, Journal of Heredity; Medical Genetics*
Robert Hanna Felix, M.D., M.P.H., *Director, National Institute of Mental Health, National Institutes of Health; Mental Hygiene*
Francis Byron Gordon, Ph.D., M.D., *Head, Virology Division, National Naval Medical Research Institute, National Naval Medical Center; Virology*
Samuel Jacob Ajl, Ph.D., *Assistant Chief, Department of Bacteriology, Communicable Diseases Division, Walter Reed Army Institute of Research, Walter Reed Army Medical Center; Microbiological Chemistry*
Sarah Bishop Brooks, R.N., B.S. in P.H.N., *Director, Division of Public Health Nursing, Arlington County Health Department; Public Health Practice*

- Martin Marc Cummings, B.S., M.D., Chief, Research and Education Service, Department of Medicine and Surgery, Veterans Administration; Medical Bacteriology
- Morris Cecil Leikind, M.S., Chief, Historical Research Division, Medical Museum, Armed Forces Institute of Pathology; History of Microbiology
- James Lee Goddard, M.D., M.P.H., Chief, Accident Prevention Program, Division of Special Health Services, Department of Health Education, and Welfare; Accident Prevention

Master of Arts or Master of Science in the field of Bacteriology (Columbia College).—Prerequisite: a Bachelor of Arts or a Bachelor of Science degree respectively, from this University, or the equivalent, with a major in Biology, Botany, Chemistry, or Zoology. The undergraduate program must include the following courses or the equivalent: Chemistry 11-12, 21, 151-52; Physics 11, 12; Zoology 1-2, 41-42.

Required: the general requirements of Columbia College as stated on pages 91-95. The thirty semester hours must include (if not presented for admission) Bacteriology 112, 210, 249-50, 293-94, 299-300 and Biochemistry 221-22. The remaining courses are to be selected from Bacteriology 209, 219-23, 237, 242, 244, 245, 246 and 295-96. The student with much bacteriological background may substitute for credit one or more courses from the following: cytology, genetics, physiology, entomology, histology, biostatistics, and protozoology. It is not always possible to arrange courses and research so that the student can be assured of completing all required work in one academic year.

Doctor of Philosophy (Graduate Council).—See page 105.

101 Biostatistics (1)

Fall—Sat., 11:00 A.M.

The meaning and use of statistical terms and methods pertinent to the design of experiments and the interpretation of the results obtained in laboratory, clinical, and field trials.

112 General Bacteriology (4)

Spring—Mon., Wed., and Fri., 9:10 to 12:00 A.M.

For nonmedical students. A study of the fundamentals of bacteriology, including hygienic applications. Methods of cultivation and control of several groups of microorganisms are studied in the laboratory. Prerequisite: any biological laboratory science; Chemistry 11. Laboratory fee, \$13.

209 Medical Microbiology (1 to 11)

Fall: lecture (4 hours), laboratory (10 hours)—as arranged.

Bacteria, rickettsia, viruses, yeasts, molds, protozoa, and metazoa, which relate to the health and diseases of man—cultural studies of the most important forms; methods of diagnosis by microscopic, immunologic, and animal reactions; theory and methods of chemotherapy; vaccines; serums; antibiotics. Open to suitably prepared graduate students; may be elected as a whole or in part by admission.

appropriate letter to the course number, with credit allocated as follows: (a) *Bacteriology*, including rickettsia and viruses—lecture (4), laboratory (3); (b) *Parasitology*, including medical mycology—lecture (2), laboratory (1); (c) *Immunology* (1). May be taken by a limited number of candidates for Master's degrees. Laboratory fee, \$4.50 for each semester hour of laboratory work.

210 *Fundamentals of Epidemiology and Preventive Medicine* (2) Ley and Staff

Spring—Mon., 2:00 to 4:00 P.M.

Sources, modes, and implications of infection and injury. Consideration also given the problem of accidents and industrial medicine. Open to liberal arts graduate students. Prerequisite: Bacteriology 112 or 209.

219-20 *Advanced Microbiology* (arr.) Hugh and Staff

Academic year—as arranged.

Special study of advanced methods and current problems in microbiology for suitably qualified students specializing in microbiology. Prerequisite: Bacteriology 112 or 209; Chemistry 151-52 or the equivalent; permission of the instructor. Laboratory fee, \$4.50 a semester hour.

230 *Statistics in Microbiology* (3) Griffin

Spring—as arranged.

The application of statistical methods to the problems of microbiology. For graduate students. Prerequisite: entrance or elementary college algebra.

232 *Immunological Methods* (3) McCarten

1960-61 and alternate years: spring—as arranged.

Preparation and testing of serological materials. Demonstration of basic serological phenomena. For graduate students. Prerequisite: Bacteriology 112 or 209 and permission of the instructor. Laboratory fee, \$11.

234 *Virology* (6) Robbins

1959-60 and alternate years: spring—as arranged.

Study of viruses and rickettsiae. Lectures and laboratory exercises. For graduate students. Prerequisite: Bacteriology 112 or 209 and permission of the instructor. Laboratory fee, \$16.

240 *Advanced Epidemiology and Public Health* (3) Parr

Spring—as arranged.

Conferences, readings, and problems for graduate students dealing with specialized and advanced phases of the topics presented in Bacteriology 210. Prerequisite: Bacteriology 210.

- 249-50 *Introduction to Medical Research** (3-3) The Staff
 Academic year—Sat. 8:00 A.M. to 1:00 P.M.
 Primarily for graduate students. A comprehensive introduction to the major medical research techniques—statistical, physical, chemical, electrical, and radioisotopic—as applied to biological materials in the medical sciences. Laboratory fee, \$7.50 a semester.
- 293-94 *Staff Seminars* (1-1) The Staff
 Academic year—as arranged.
 For graduate students. Bi-weekly throughout the year.
- 295-96 *Research in Bacteriology* (arr.) The Staff
 Academic year—as arranged.
- 299-300 *Thesis* (3-3) The Staff
 401 *Public Health Practice* Beachley and Staff
 Fall—1 hour a week for 5 weeks.
 Study of public health practice at national, state, city, and county levels. Public and private agencies.

* This is an interdepartmental course. The student should register in the department directing his research.

BIOCHEMISTRY

Joseph Hiram Roe, Ph.D., *Professor Emeritus of Biochemistry in Residence*

Carleton Raymond Treadwell, Ph.D., *Professor of Biochemistry, Executive Officer*

William Robert Carroll, Ph.D., *Professorial Lecturer on Proteins*

Charles Hunt Fugitt, Ph.D., *Professorial Lecturer on Physical Biochemistry*

George Gilbert Ashwell, M.S., M.D., *Professorial Lecturer on Enzymes*

Benjamin Williams Smith, Ph.D., *Associate Professor of Biochemistry*

George Vartkes Vahouny, Ph.D., *Assistant Professor of Biochemistry*

John Martyn Bailey, Ph.D., *Assistant Professor of Biochemistry*

Harold William Clark, Jr., Ph.D., *Associate in Biochemistry*

Master of Arts or Master of Science in the field of Biochemistry (Columbia College).—Prerequisite: a Bachelor of Arts or a Bachelor of Science degree. The undergraduate program must have included the following courses, or the equivalent: Chemistry 11-12, 21, 22, 151-52; Physics 11 and 12; Zoology 1-2 or Biology 1-2.

Required: the general requirements of Columbia College as stated on pages 91-95. The thirty semester hours must include Biochemistry 221-22, 225-26, 227-28, 299-300. The remaining courses are to be selected from Biochemistry 224, 232, 234, 242, 251, 261, 295-96, or, with the approval of the adviser, from graduate courses in Bacteriology, Chemistry, Physiology, or Pharmacology. It is usually not possible to arrange courses and research so that the student can be assured of completing all of the required work in one academic year.

Doctor of Philosophy (Graduate Council).—See page 105.

113-14 Biochemistry

The Staff

Academic year: lecture (2 hours), conference (1 hour), laboratory (6 hours)—as arranged.

Physiological and clinical chemistry. For medical students.

221-22 Biochemistry (4-4)

Treadwell, Vahouny

Academic year—Tues. and Thurs., 9:00 to 12:00 A.M. and 1:00 to 2:00 P.M.

A lecture and laboratory course for nonmedical students. Prerequisite: Chemistry 22 and 152. Material fee, \$15 a semester.

224 Biochemistry of the Enzymes (1)

Ashwell

Spring—Mon., 5:00 P.M.

Lecture course dealing with the biochemistry of the enzymes and enzyme reactions. Prerequisite: Biochemistry 113 or 221.

225-26 *Biochemical Procedures* (3-3)

B. Smith and Staff

Academic year—as arranged.

A laboratory course. Material fee, \$16 a semester.

227-28 *Biochemistry Seminar* (1-1)

The Staff

Academic year—Fri., 4:00 P.M.

The current literature in the field of biochemistry, mainly for graduate students, but open to a limited number of specially qualified medical students.

232 *Proteins and Amino Acids* (1)

Carroll

Spring—Wed., 5:00 P.M.

A lecture course. Prerequisite: Biochemistry 113 or 221.

Fugitt

234 *Physical Biochemistry* (1)

Spring—Sat., 9:00 A.M.

A lecture course. Physical methods as applied to biochemical problems, including macromolecules and radiobiology. Prerequisite: Biochemistry 113 or 221.

The Staff

249-50 *Introduction to Medical Research** (3-3)

Academic year—Sat. 8:00 A.M. to 1:00 P.M.

Primarily for graduate students. A comprehensive introduction to the major medical research techniques—statistical, physical, chemical, electrical, and radioisotopic—as applied to biological materials in the medical sciences. Laboratory fee, \$7.50 a semester.

Rox

251 *Carbohydrate Metabolism* (1)

1960-61 and alternate years: Fall—Sat., 9:00 A.M.

A lecture course. Prerequisite: Biochemistry 114 or 222.

Treadwell

261 *Biochemistry of the Lipids* (1)

1959-60 and alternate years. Fall—Sat., 9:00 A.M.

A lecture course. Prerequisite: Biochemistry 114 or 222.

The Staff

295-96 *Research in Biochemistry* (arr.)

Academic year—as arranged.

The Staff

299-300 *Thesis* (3-3)

* This is an interdepartmental course. The student should register in the department doing his research.

BIOLOGY*

Paul William Bowman, Ph.D., *Professor of Biology, Executive Officer*
 Robert Carter Cook, *Professorial Lecturer on Genetics*
 Sam Clark Munson, Ph.D., *Associate Professor of Biology*
 Ntinos Myrianthopoulos, Ph.D., *Associate Professorial Lecturer on Genetics*

Bachelor of Arts or Bachelor of Science with a major in Biology (Columbian College—Field of Study).—Prerequisite: the Arts and Letters or the Science curriculum, respectively, in the Junior College, see pages 70 and 71.

Required: the general requirements of Columbian College as stated on pages 85-91 and the grade of "pass" on the Biology major examination during the senior year. The coordinated field of knowledge upon which the student will be examined includes the classification and life histories of plants and animals, ecology, geology, evolution, heredity, the physical and cultural development of man, public health problems, and the history of biology. The course offerings will be correlated and supplemented by supervised study in a proseminar. For further details, see the pamphlet, which is available at the Office of the Dean of Columbian College.

Master of Arts or Master of Science in the field of Biology (Columbian College).—Prerequisite: a Bachelor of Arts or Bachelor of Science degree, respectively, with a major in Biology at this University, or the equivalent.

Required: the general requirements of Columbian College as stated on pages 71-95.

Bachelor of Arts in Education with a teaching field in Biology (School of Education).—Prerequisite: the Education curriculum, pages 72-73.

Required: the Biology option, page 171, and the professional courses listed on page 178.

Doctor of Philosophy (Graduate Council).—See page 106.

FIRST GROUP

1-2 *Survey in Biology* (3-3)

Munson and Staff

Academic year—morning, afternoon, and evening; summer 1959.

Systematic study of the plant and animal kingdoms, with emphasis upon the interdependence of living things and their relations with their environments. Introduction to evolution, heredity, public health, and conservation. Material fee, \$7 a semester. Lecture, laboratory, and field trip to nearby countryside, museums, and other places of biological interest.

SECOND GROUP

107-8 *Organic Evolution* (3-3)

Bowman

1959-60 and alternate years: academic year—evening; 1960-61 and alternate years: academic year—morning.

* See also departments of Botany and Zoology.

A study of the theories of organic evolution and present ideas on the principal lines of development in the plant and animal kingdoms; a review of the contributions to an understanding of the mechanisms involved in this process from the fields of genetics and cytology. Prerequisite: one year of college work in biology, botany, or zoology.

Bowman

115-16 *Cytology* (3-3)

Lecture and laboratory. 1959-60 and alternate years: academic year—afternoon; 1960-61 and alternate years: academic year—evening.

Plant and animal cells and their components, including the chromosomes and their role in heredity, with training in the preparation of materials for study. Prerequisite: one year of college work in biology, botany, or zoology. Material fee, \$8 a semester.

Cook

127 *Genetics* (3)

Fall—morning.

A lecture course in which the general principles are illustrated with specific examples of inheritance in plants and animals, including man. Prerequisite: one year of college work in biology, botany, or zoology.

139 *Cell Physiology* (3)

Not offered 1959-60.

The fundamental physiology of protoplasm. Prerequisite: Chemistry 12 and one year of college biology, botany, or zoology.

Munson

199-200 *Proseminar in Biology* (3-3)

Academic year—as arranged.

Individually planned and directed study by means of which material in biology may correlate and supplement the subject matter presented in various regular courses.

THIRD GROUP

201-2 *Seminar: Cytology* (3-3)

Academic year—evening.

Bowman

211-12 *Research in Cytology* (arr.)

Academic year—as arranged; summer 1959—Biology 212 (arr.)

Bowman

Bowman

299-300 *Thesis* (3-3)

Academic year—as arranged; summer 1959.

BOTANY*

Russell Bradford Stevens, Ph.D., *Professor of Botany, Executive Officer*
 Lyman Bradford Smith, Ph.D., *Professorial Lecturer on Plant Taxonomy*
 Kittie Fenley Parker, Ph.D., *Associate Professorial Lecturer on Plant*

Taxonomy

Caroline Lander Adams, Ph.D., *Associate Professorial Lecturer on Plant Morphology*

Robert Sumner Sigatoos, Ph.D., *Associate Professorial Lecturer on Plant Ecology*

Edward Hacskeylo, Ph.D., *Lecturer on Plant Physiology*

Henry Marcellus Cathey, Ph.D., *Lecturer on Plant Physiology*

George Adelbert Livingston, Ph.D., *Lecturer in Botany*

Bachelor of Arts or Bachelor of Science with a major in Botany (Columbian College—Departmental).—Prerequisite: the Arts and Letters or the Science curriculum, respectively, in the Junior College, including Botany 1-2, see pages 70 and 71.

Required: in addition to the general requirements of Columbian College as stated on pages 85-91, a minimum of twenty-four semester hours of second-group courses in Botany or in a combination of Botany and related sciences as approved by the Executive Officer.

Master of Arts or Master of Science in the field of Botany (Columbian College).—Prerequisite: the equivalent of a Bachelor of Arts or Bachelor of Science degree, respectively, from this University with a major in Botany or Biology.

Required: the general requirements of Columbian College as stated on pages 91-95.

Doctor of Philosophy (Graduate Council).—See page 106.

FIRST GROUP

1-2 General Botany (3-3) Stevens, Adams, Livingston

Lecture (2 hours), laboratory (2 hours).

Academic year—morning, afternoon, evening; summer 1959.

Study of the structure, activities, and development of the flowering plant; a survey of the different kinds of plants, their evolution, ecological relationships, economic significance, and principles of inheritance. Material fee, \$7 a semester.

SECOND GROUP

105 Field Botany (3)

Parker

Lecture (1 hour), laboratory and field (4 hours).
 1959 and alternate summers.

A course, primarily for nonspecialists, emphasizing local flora. Prerequisite: Botany 1 or Biology 1, or permission of the instructor.

* See also the departments of Biology, Geography, and Zoology

- 107 Plant Morphology: Lower Groups (3)** Adams
Lecture (1 hour), laboratory and field (4 hours).
1959-60 and alternate years: spring-evening.
Field and laboratory study of the habitat, structure, and identification of representative algae, mosses, and ferns. Prerequisite: Botany 1-2 or Biology 1-2.
- 109 Plant Morphology: Seed Plants (3)** Adams
Lecture (2 hours), laboratory (2 hours).
1959-60 and alternate years: fall-evening.
Comparative study of root, stem, leaf, and flower of seed plants, with special reference to economically important families. Prerequisite: Botany 1-2 or Biology 1-2. Material fee, \$8.
- 116 Plant Growth (3)** Hacskeyle
Lecture (2 hours), laboratory (2 hours).
1960 and alternate summers.
A course, primarily for nonspecialists, emphasizing practical problems of growing and caring for plants. Prerequisite: Botany 1 or Biology 1, or permission of the instructor. Material fee, \$8.
- 118 Physiology of Bacteria and Fungi (3)** Hacskeyle
Lecture (2 hours), laboratory (2 hours).
1960-61 and alternate years: spring-evening.
Lectures, literature reviews, and laboratory studies of the physiology of bacteria and fungi. Prerequisite: Botany 131 or permission of the instructor. Material fee, \$8.
- 125-26 Plant Taxonomy (3-3)** Parker
Lecture (1 hour), laboratory and field (4 hours).
1959-60 and alternate years: academic year-evening.
A study of the characteristics, phylogeny, and classification of flowering plants. Field collection and identification. Prerequisite: Botany 1-2 or Biology 1-2.
- 131 Mycology (3)** Stevenson
Lecture (2 hours), laboratory (2 hours).
1960-61 and alternate years: fall-evening.
Prerequisite: Botany 1-2 or Biology 1-2. Material fee, \$8.
- 133-34 Plant Pathology (3-3)** Stevenson
Lecture (2 hours), laboratory (2 hours).
1959-60 and alternate years: academic year-evening.
Prerequisite: Botany 1-2 or Biology 1-2. Material fee, \$8 a semester.

135-36 *Plant Physiology* (3-3)

Cathey

Lecture (2 hours), laboratory (2 hours).
1960-61 and alternate years: academic year—evening.

Prerequisite: Botany 1-2 or Biology 1-2, and Chemistry 11-12.
Material fee, \$8 a semester.

141-42 *Plant Ecology* (3-3)

Sigafos

Lecture (1 hour), laboratory and field (4 hours).
1960-61 and alternate years: academic year—evening.

Prerequisite: Botany 1-2 or Biology 1-2.

143 *Introduction to Plant Geography* (3)

Not offered 1959-60.

144 *The Vegetation of North America* (3)

Not offered 1959-60.

161 *Soils* (3)

Not offered 1959-60.

THIRD GROUP

221-22 *Seminar: Taxonomy* (3-3)

Smith

1962-63 and every fourth year: academic year—as arranged.

231-32 *Seminar: Mycology and Plant Pathology*
(3-3)

Stevens

1960-61 and every fourth year: academic year—as arranged.

235-36 *Seminar: Plant Physiology* (3-3)

Cathey, HacsKaylo

1959-60 and every fourth year: academic year—as arranged.

241-42 *Seminar: Plant Ecology* (3-3)

Sigafos

1961-62 and every fourth year: academic year—as arranged.

295-96 *Research* (arr.)

The Staff

Academic year—as arranged; summer 1959—Botany 295 (arr.). Fee to be arranged.

299-300 *Thesis* (3-3)

The Staff

Academic year—as arranged; summer 1959.

BUSINESS AND PUBLIC ADMINISTRATION

- Richard Norman Owens, Ph.D., C.P.A., *Professor of Business Administration*
- Harold Griffith Sutton, M.S., *Professor of Finance*
- Arlin Rex Johnson, Ph.D., *Professor of Business Administration*
- Joe Lee Jessup, M.B.A., *Professor of Business Administration*
- James Carlton Dockeray, Ph.D., *Professor of Finance, Executive Officer*
- David Springer Brown, Ph.D., *Professor of Public Administration*
- Archibald Mulford Woodruff, Ph.D., *Professor of Business Research*
- Gilbert Chester Jacobus, B.S. in C.E., M.B.A., LL.B., *Research Professor of Public Administration*
- Montell Ernest Ogdon, Ph.D., *Professorial Lecturer in Business Administration*
- Karl Ernest Stromsem, Ph.D., *Professorial Lecturer in Public Administration*
- Joseph Leo Krieger, Ph.D., *Professorial Lecturer in Business Administration*
- Carl William Clewlow, A.M., *Professorial Lecturer in Business Administration*
- William George Torpey, Ph.D., *Professorial Lecturer in Public Administration*
- Joseph Novak Stoncifer, A.M., *Professorial Lecturer in Business Administration*
- Kenneth Frederick McClure, M.S., LL.B., *Professorial Lecturer in Commercial Law*
- Felix Ira Shaffner, Ph.D., *Professorial Lecturer in Business Administration*
- Charles Edwin Houston, Ph.D., *Professorial Lecturer in Business Administration*
- Charles Berns, A.M., LL.B., *Professorial Lecturer in Business Administration*
- Roy Brandon Eastin, Ph.D., *Professorial Lecturer in Public Administration*
- Irving Samuel Schwartz, A.M., *Professorial Lecturer in Public Administration*
- Edward McCrensky, Ed.M., *Professorial Lecturer in Public Administration*
- John Clayton, Ph.D., *Associate Professor of Business Administration*

- Leonard Prestwich, Ph.D., *Associate Professor of Business Administration*
- Joseph Patrick Murphy, A.B., LL.B., LL.M., *Associate Professorial Lecturer on Commercial Law*
- William Williams Edwards, A.M., *Associate Professorial Lecturer in Business Administration*
- Robert Kaye, A.M., *Associate Professorial Lecturer in Business Administration*
- Leonard Cornelius Collins, A.B., LL.M., *Associate Professorial Lecturer on Commercial Law*
- John Provan, M.S., *Associate Professorial Lecturer in Business and Public Administration*
- Alfred Gaylord Obern, Ph.D., *Assistant Professor of Public Administration*
- Robert Fenn Towson, Jr., D.B.A., *Assistant Professor of Business Administration*
- Robert John Bond, A.B., *Lecturer in Business Administration*
- Frederick William Walther, M.B.A., *Lecturer in Business Administration*
- George Idelson, B.S., *Lecturer in Business Administration*
- John Morrow, A.M., *Lecturer in Business Administration*
- Walter Draper Neighbors, A.B., C.P.C.U., *Lecturer in Business Administration*
- Jesse Frank Doubleday, A.M., *Lecturer in Business Administration*

Bachelor of Arts in Government with a major in Business Administration (School of Government).—For curricula, see pages 74, 197.

Master of Business Administration (School of Government).—Prerequisite: an acceptable undergraduate major in Business Administration or the equivalent.

Required: the general requirements for the degree as stated on pages 200-202.

Master of Arts in Public Administration (School of Government).—For curricula see pages 206-7.

Master of Arts in Personnel Administration (School of Government).—For curriculum see page 206.

Doctor of Business Administration (School of Government).—Prerequisite: a Master's degree in Business Administration or a related field, or the equivalent, and proficiency in Statistics and Accounting to the satisfaction of the Committee on Doctoral Studies.

Required: thirty hours of graduate work beyond the Master's level, the passing of a general examination in six fields, and the writing and defending of a dissertation. See pages 207-8.

Bachelor of Arts in Education with teaching fields in Business Education (School of Education).—Prerequisite: the Education curriculum, pages 72-73.

Required: the Business Education option, pages 171-72, and the professional courses listed on page 178.

BUSINESS ADMINISTRATION

SECOND GROUP

- 101 *Business Organization and Combination* (3) Clayton
Fall—morning and evening; spring—morning; summer 1959.
Simple and interrelated forms of business enterprise and their control by government.
- 102 *Fundamentals of Management* (3) Towson, Obern
Fall—morning; spring—morning and evening; summer 1959.
Planning, organizing, directing, coordinating, and controlling the activities of the administrative unit; evolution of management thinking.
- 105 *Personnel Management* (3) Owens, Towson
Fall—morning; spring—evening; summer 1959.
Industrial personnel and manpower programs, organizations and policy in personnel activities.
- 106 *Problems in Personnel Management* (3) Owens, Stonesifer
Spring—morning.
Principles of manpower management illustrated by cases drawn from business, industry, and government. Prerequisite: Business Administration 105.
- 107 *Management—Labor Relations* (3) Hubben
Spring—morning.
Management's role in the negotiation and administration of collective bargaining agreements, as essential to development of good management-labor relations.
- 109 *Office Management* (3) Walther
Fall—evening; spring—evening.
Organization and layout of an office, use of office machines and appliances, planning and execution of work, supervision problems.
- 113 *Real Estate* (3) Doubleday
Fall—evening.
Fundamentals of real estate practice: leasing and property management; valuation, financing, and taxation.
- 121 *General Insurance* (3) Doubleday
Spring—evening.
A general course in underlying principles of property, life, marine and casualty insurance, and the function of insurance in the economy of a business or individual. Prerequisite: Economics 1-2.

123-24 Property and Casualty Insurance A and B Neighbors
(2-2)

1960-61 and alternate years.

The principles and practices of property and casualty insurance with emphasis on the economics of insurance, types of carriers, contract provisions, agency and brokerage, and state regulation and supervision.

125-26 Property and Casualty Insurance C and D Neighbors
(2-2)

1959-60 and alternate years: academic year—evening.

The principles and practices of property and casualty insurance with emphasis on theory of probability, rates and rating, reserves, financial statements, and investments; loss adjustment and loss prevention. Prerequisite: Business Administration 123-24.

127-28 Property and Casualty Insurance E and F Neighbors
(2-2)

1959-60 and alternate years: academic year—evening.

Principles of accounting; principles of business and personal finance; business organization and agency management.

129-30 Property and Casualty Insurance G and H Neighbors
(2-2)

1960-61 and alternate years.

Insurance law with particular attention given to construction of insurance contracts, and general commercial law as it relates to contracts, agencies, partnerships, corporations, personal property, real estate and mortgages, negotiable instruments, bankruptcy, bailments, common and private carriers, and negligence.

131 Business Finance (3) Clayton, Towson

Fall—morning; spring—morning and evening.

Basic principles involved in the financing of business enterprises. Prerequisite: Accounting 1-2.

136 Credit Management (3) Prestwich

Spring—evening.

Types and sources of credit information, credit relationships from the standpoint of the commercial bank and the commercial business enterprise. Prerequisite: Accounting 1-2.

138 Investments (3) Dockeray, Towson

Spring—morning; summer 1959.

Analysis of factors of investment credit with application to different types of investments, proper selection of investments for various classes of investors, regulation. Prerequisite: Accounting 1-2.

- 141 Principles of Marketing (3)** Prestwich, Towson
 Fall—morning; spring—evening; summer 1959.
 An introduction to marketing structure and its relation to the total economy, consumer and demand analysis, retailing, wholesaling, major marketing management problems and policies. Prerequisite: Economics 1-2.
- 142 Marketing Management Problems (3)** Towson
 Spring—evening.
 Practical problems of retailers, wholesalers, and manufacturers considered through the use of cases and text material; fundamental considerations in marketing decisions and the nature of the problem-solving process. Prerequisite: Business Administration 141.
- 143 Marketing Research (3)** Towson
 Fall—evening.
 Principles and practices of marketing research with particular emphasis upon basic methods and techniques, sources and interpretation of data, and presentation of results.
- 145 Sales Management (3)** Towson
 Spring—morning.
 Organization of the sales department, sales planning and forecasting, quotas, territories, performance standards, and analysis and control of distribution costs. Prerequisite: Business Administration 141.
- 147 Advertising (3)** Idelson
 Fall—evening.
 Advertising as a function of marketing and merchandising; uses and limitations of advertising as a tool of management; fundamentals involved in getting a finished advertisement before potential customers; evaluation, criticism, and control of advertising.
- 149 Retail Advertising and Sales Promotion (3)** Prestwich
 Not offered 1959-60.
 Operation of the advertising department in a retail store. Use of newspaper, radio, and television advertising by retail stores. Other advertising media, programming, and budgeting.
- 150 Procurement and Materials Management (3)** Prestwich
 Spring—evening.
 Purchasing organization, procedures, and policies; market relationships; selection of merchandise and sources of supply; procurement information and records; evaluation of procurement practices in industry and government.

- 151 *Retail Store Management* (3) Prestwich
Fall—evening.
Principles and problems in retail store management including financing, location, personnel management, store layout, buying, pricing, stock control, accounting, sales promotion, and customer services.
- 152 *Retail Merchandising and Control* (3) Prestwich
Spring—evening.
Managerial problems and policies with reference to profit calculations, pricing, purchase planning, stock control, merchandise and expense budgets, inventory evaluation, and other related phases of retail merchandising.
- 153 *Principles of Personal Selling* (3) Prestwich, Idelson
Fall—evening; summer 1959.
Basic principles that underlie personal selling and the practical application of these principles. Emphasis is given to the human factor. Career opportunities and the role of selling in our economy are also considered.
- 158 *Traffic Management* (3) Kaye
Not offered 1959-60.
Organization and records of traffic department, routing of shipments, services by carriers, rates and charges, relation of shipper to transportation agencies.
- 161 *Commercial Law: Contracts, Sales, Agency, and Bailments* (3) Collins, McClure, Berns
Fall—afternoon and evening.
- 162 *Commercial Law: Negotiable Instruments, Property, Mortgages* (3) Collins, McClure
Spring—afternoon and evening.
- 163 *Law in Relation to the Form of Business Units: Corporations, Partnerships, and Trusts* (3) Murphy
Fall—evening.
- 171 *Principles of Transportation* (3) Clayton
Fall—evening.
Impact of transport on society; development, economic characteristics, services, rates, and regulation of the various modes of domestic inter-city transportation.

172 *Public Utilities* (3)

Clayton

Not offered 1959-60.

Legal and economic meaning of the public utility concept; development, services, economic characteristics, ratemaking, and regulation of the various utility industries, with particular emphasis on electric, gas, telephone, and urban transit industries.

173 *Commercial Motor Transportation* (3)

Clayton

Not offered 1959-60.

Organization, management, services, economic characteristics, rates, and regulation of motor transport firms; highways and highway financing considered from the point of view of both producers and users of the services.

174 *Commercial Air Transportation* (3)

Clayton

Spring—evening.

Organization, management, services, economic characteristics, rates, and regulation of air transport firms; policies and activities of the government in the development, promotion, and control of air transport.

175 *Introduction to Foreign Trade* (3)

Kaye

Fall—evening.

Terminology, trade usages and practices, conditions essential to successful trading, economic bases of international trade, obstacles to trade, tariffs, impact of governmental controls on private trade. Prerequisite: Economics 1-2.

176 *Exporting and Importing* (3)

Kaye

Spring—evening.

Policy and operating problems of foreign trade, financing, documentation, packing and transportation of shipments, ocean marine insurance, and U.S. Customs procedure and formalities.

178 *Foreign Markets* (3)

Ogdon

Not offered 1959-60.

Pattern of world trade by countries and commodities, methods of comparing market surveys, selected regional market analyses. Prerequisite: Economics 1-2.

191 *Business Reports and Analyses* (3)

Not offered 1959-60.

Sources of management information, array and analysis of data, interpretation and presentation of the findings.

193 *Management Communication* (3)

Morrow

Fall—evening.

A survey course in the problems of communication; written communication: style and format; oral communication: oral briefing and presentation; group leadership; rapid reading; completed staff work; and related subjects.

195 *Controllership* (3)

Jessup, Edwards

Fall—evening.

The duties, responsibilities, and place of the controller in a business organization; relations of controller to other departments and regulatory bodies; and the controller's relation to price setting and inventories, depreciation policies, internal auditing, expense control and budgeting; and financial reports to management, stockholders, and employees. Prerequisite: Accounting 1-2. Open to seniors.

197 *Introduction to Business Policy* (3)

Towson

Fall—evening.

Significance of business policies in management; formulation of policies; relation of various organizational levels to policy making; some significant policies, including case problems

198 *Case Problems in Management* (3) Towson, Prestwich

Fall—morning and evening; spring—morning and evening.

Principles and techniques of management illustrated by cases drawn from business and industry. Prerequisite: Business Administration 102, 105, 131, 141.

THIRD GROUP

201 *Advanced Management* (3)

Towson

Fall—evening.

An advanced course in management emphasizing principles of management in relation to business enterprise.

209 *Seminar in Industrial Personnel Management* (3) Stonesifer

Fall—evening.

Discussion of industrial personnel and manpower management, and research in advanced problems.

218 *Data Processing* (3)

Provan

Spring—evening.

Selecting and adapting data processing equipment, characteristics of leading systems, elements of programming.

- 231 *Corporate Financial Problems* (3) Dockeray, Houston
Fall—evening.
Financial practice in promotion, consolidation, and mergers; capital structure adjustments; and reorganization.
- 232 *Seminar in Business Finance* (3) Dockeray, Houston
Spring—evening; summer of 1959.
Research in advanced financial problems.
- 237 *Security Analysis* (3) Dockeray, Shaffner
Fall—evening.
An advanced course in the applications of investment principles and analytical techniques to the selection of investments. Prerequisite: Business Administration 138.
- 238 *Seminar in Investments* (3) Dockeray, Shaffner
Spring—evening.
Research in investment problems, techniques of selection and management of various types of funds. Prerequisite: Business Administration 138.
- 241-42 *Seminar in Marketing* (3-3) Johnson, Prestwick
Academic year—evening.
An advanced course in marketing, emphasizing special and current problems in the field. (Business Administration 241 is not a prerequisite for Business Administration 242.)
- 251 *Seminar in Retail Management* (3) Prestwick
Fall—evening.
Research in retailing practices, with emphasis on trends, new developments, and current problems.
- 268 *Management Engineering* (3) Clewley
Fall—evening.
Analysis of the techniques for initiation and implementation of management engineering programs, with emphasis on organizational methods surveys, including the study of work measurements, simplification, management audits, and other management improvement programs.
- 273-74 *Readings in Business* (3-3) The School
Academic year—as arranged.
Advanced readings in the fields of finance, marketing, and personnel management. Admission by permission of the instructor.

- 278 *The Dynamics of Business* (3) Clayton
Summer 1959.
An analysis of the structure of American business, including a study of trend and cyclical change in economic activity and their bearing upon governmental policy.
- 286 *Management in the Armed Forces* (3) Jessup
Fall—evening.
Special problems of military organization and management; applicability of business management techniques to the armed forces.
- 287 *Relation of Government to Business* (3) Clayton
Spring—evening.
Activities of government in their relation to business management in such areas as labor relations, wages, production, and prices.
- 288 *Executive Leadership* (3) Krieger, Jessup
Spring—evening.
Examination of principles and problems of executive leadership and development; intensive consideration of basic issues and guides to executive action in business and public administration; review of the literature, significant research findings, and practical illustrations.
- 291-92 *Seminar in Business Management* (3-3) Owens
Academic year—evening; summer 1959—Business Administration 291 (3).
Research on various phases of management as practiced in American industry.
- 293-94 *Business Research* (3-3) The Staff
Not offered 1959-60.
- 296 *Seminar in Controllershship* (3) Jessup
Spring—evening.
Research on advanced problems of the controller in all types of business organization and the Federal Government.
- 297-98 *Business Policy* (3-3) Jessup
Academic year—evening.
Problems of management are analyzed with the view of developing a practical solution; cases are used to show the problems of personnel in marketing, industrial management, finance, etc.
- 299-300 *Thesis* (3-3) Dockeray and Staff
Academic year—evening; summer 1959.

COURSES OFFERED IN SPECIAL PROGRAMS

In addition to the regular courses announced above, the University offers the following business administration courses for students enrolled in the following special programs: Navy Graduate Comptrollership Program, Air Force Advanced Management Program, and Engineering Administration.

- 191 *Business Reports and Analyses* (3) (Summer 1959)
- 235 *Financial Management* (3)
- 250 *Contract Administration* (3)
- 253 *Procurement and Distribution* (3)
- 261 *Seminar in Advanced Management* (3)
- 263-64 *Business Organization and Management* (3-3)
- 268 *Management Engineering* (3) (Summer 1959)
- 269 *Readings and Conferences in Controllershship* (2 or 3)
- 275-76 *Human Relations in Business* (3-3)
- 284 *Readings and Conferences in Management* (2)
- 290 *Research Seminar in Management* (3)
- 295 *Research Seminar in Controllershship* (3)

PUBLIC ADMINISTRATION

THIRD GROUP

- 210 *The Management Function* (3)

Spring—evening.

Principles and processes of management with particular attention to planning of organization, direction and coordination of work, internal communication, and measurement of achievement in government.

- 211 *Problems of Governmental Organization* (3)

Fall—evening; summer 1959.

Theories and principles of organization; analysis of problem areas in administration, such as decentralization, staff-line, field-headquarters, and executive-legislative relationships.

Easton

Obert

- 212 *Case Studies in Administration* (3) Obern
Spring—evening.
Analysis and discussion of problems in public management, approached by the group using primarily the case method.
- 215 *Seminar in Comparative Administration Systems* (3) Obern
Fall—evening.
Examination and analysis of the administrative systems of the major foreign governments with particular attention to practice applicable to administration in the United States.
- 216 *Management Analysis and Methods Improvement* (3) Clewlow
Spring—evening.
Management engineering, techniques of organization survey and work analysis, improvement of administrative effectiveness, application of principles of scientific management.
- 217 *New Tools of Management* (3) Brown
Spring—evening.
This course provides information for the advanced student on latest developments in new methods of administration, including electronics devices (automotive equipment), operations research, quality control, attitude measurement, and similar activities.
- 221-22 *Staff Functions in Government* (3-3) ———, Obern
Academic year—evening.
Designed primarily to provide an understanding of the nature, use, and problems of the staff functions as tools of management. Survey of such staff areas as personnel, budgeting, controllership, procurement, property management, the agency lawyer, security, public relations and information, planning, research, the secretariat, management engineering, auditing, accounting, and administrative services.
- 225-26 *Internship in the Administrative Processes* (3-3) ———
Academic year—as arranged.
This course is open only to persons selected by government agencies for participation in approved intern programs.
- 231 *Public Personnel Management* (3) Torpey
Fall—evening; summer 1959.
Basic principles; structure and organization of personnel offices; responsibilities; inter-agency relationships; personnel staffing, training, and work measurement.

232 *Personnel Procedures and Problems* (3)

Torpey

Spring—evening.

Study of such personnel functions as recruitment, selection, placement, promotion, supervision, evaluation, classification, and training. Practical problems of personnel administration.

233 *Seminar in Manpower Development and Utilization* (3)

Fall—evening.

Research projects and case studies in ways and means of increasing employee potential, use of training programs, executive development, incentive systems.

237 *Intermediate Management and Supervision* (3)

Easton

Fall—evening.

The role of the supervisor and intermediate manager, methods for improving group performance, work measurement, pertinent regulations governing federal personnel.

241 *Human Relations in Governmental Administration* (3)

McCrensky

Fall—evening; summer 1959.

Factors involved in working with people in governmental institutions. Study and research in human problems in management; discussion of programs for improved human relationships.

251 *Governmental Budgeting* (3)

Schwarz

Fall—evening; spring—evening.

The role of budgeting in management; the principles and practices of budgetary formulation and administration.

252 *Seminar in Planning and Programming* (3)

Jacobson

Fall—evening.

Performance budgeting; relating the work program to the fiscal program; budgetary evaluation. This course is primarily for students who have completed Public Administration 251.

254 *Controllorship in the Federal Services* (3)

Krieger

Spring—evening.

Function of the controller in federal agencies; special problems analyzed; comparison of the controller function in government and business.

259 Government Procurement and Property Management (3)

Not offered 1959-60.

Principles and problems of government procurement; accounting and inventory; storage; development of specifications; property management.

260 Seminar in Policy Formulation and Administration (3)

Brown

Fall—evening.

Development and administration of agency goals and objectives, influence of individuals upon them; factors involving informal organization such as internal pressure groups, use of sanctions, and role of executive in furthering administrative policy.

261 Public Opinion and the Administrator (3)

Stromsem

Fall—evening.

Theories, techniques, and methods of working with the public; the use of interest groups in developing governmental programs; evaluating public relations programs; the importance of timing; use of public opinion measurement techniques.

262 Contemporary Administrative Theory and Practice (3)

Jacobus

Spring—evening.

Current theories and trends in management with particular attention to the behavioral sciences, communications, and applicability of research.

271 Reading and Conference Course in Public Management and Administration (3)

Brown

Not offered 1959-60.

The purpose of this course is to provide advanced students with directed reading in specific areas of public management and administration.

272 Reading and Conference Course in Public Personnel Administration (3)

Spring—as arranged.

The purpose of this course is to provide advanced students with directed reading in specific areas of public personnel administration.

297 *Seminar in Public Administration* (3) Brown and Staff

Summer 1959.

Advanced research on various phases of public administration including methods of policy formulation and control, the application of systems to management, administration problems of bureaucratic relationships.

299-300 *Thesis* (3-3)

Brown and Staff

Academic year—evening; summer 1959.

COURSES OFFERED IN SPECIAL PROGRAMS

In addition to the regular courses announced above, the University offers the following public administration courses for students enrolled in the Air Force Advanced Management Program and in Engineering Administration.

213 *Administration in Government* (3)

251 *Governmental Budgeting* (3) (Summer 1959)

CHEMISTRY

Benjamin Douglass Van Evera, Ph.D., Sc.D., *Professor of Chemistry*
 Samuel Nathaniel Wrenn, Ph.D., *Professor of Chemistry*
 Charles Rudolph Naeser, Ph.D., *Professor of Chemistry, Executive Officer*
 Robert Corbin Vincent, Ph.D., *Professor of Chemistry*
 William Frederick Sager, Ph.D., *Professor of Chemistry*
 Reuben Esselstyn Wood, Ph.D., *Professor of Chemistry*
 James Willard Harkness, B.S., Ed.M., *Associate Professor of Chemistry*
 Theodore Peter Perros, Ph.D., *Associate Professor of Chemistry*
 William Edward Schmidt, Ph.D., *Associate Professor of Chemistry*
 *David Gover White, B.Chem.Eng., Ph.D., *Associate Professor of Chemistry*
 Clarence William Schimelpfenig, Ph.D., *Assistant Professor of Chemistry*
 Natasha Coffin Hollbach, Ph.D., *Assistant Professor of Chemistry*
 Margaret Willcox McPherson, Ph.D., *Lecturer in Chemistry*

Registration.—Before completing registration each student must obtain from the representative of the Department an assignment to lecture, recitation, and laboratory sections.

Bachelor of Arts or Bachelor of Science with a major in Chemistry (Columbian College—Departmental).—Prerequisite: the Arts and Letters or the Science curriculum, respectively, in the Junior College, see pages 70 and 71. The following first-group courses must be included: Chemistry 11-12, 21, and 22; Mathematics 29 and 30; Physics 11, 12, 19, 16; or 11, 14, 15, and 16.

Required: the general requirements of Columbian College, as stated on pages 85-91, including the following second-group courses: Chemistry 102 (or 131-132), 111-12, 113-14, 122, 151-52, and 135 or 155 (two semester hours), and a grade of "pass" on the chemistry major examination at the end of the senior year. The correlated knowledge upon which the student will be examined includes the following fields: (1) analytical chemistry, (2) inorganic chemistry, (3) organic chemistry, (4) physical chemistry. The work of the junior and senior years must be approved by the Department. The German language is required of all majors, and both French and German are recommended for students planning to do graduate work.

Master of Arts or Master of Science in the field of Chemistry (Columbian College).—Prerequisite: the degree of Bachelor of Arts or Bachelor of Science, respectively, with a major in Chemistry from this University, or the equivalent.

Required: the general requirements of Columbian College as stated on pages 91-95. All prospective Master's candidates must take qualifying examinations in the fields of analytical, inorganic, organic, and physical chemistry. These examinations will be given during the first week of classes each semester, and are a part of the prerequisites for all advanced courses. The thirty hours of required work must include Chemistry 131-32, 193, 213, 251-52, 299-300 and the program must include at least four semester hours of laboratory courses. A reading knowledge examination in French or German (German preferred) must be passed before the second half of the work is started.

* On sabbatical leave spring semester 1959-60.

Doctor of Philosophy (Graduate Council).—See page 104.

Bachelor of Science in Engineering with an option in Chemistry (School of Engineering).—See pages 145-48 and 150. The Chemistry courses required for this degree are the same as those required for the Bachelor of Science degree with the major in Chemistry as itemized above.

Bachelor of Arts in Education with a teaching field in Chemistry (School of Education).—Prerequisite: the Education curriculum, pages 72-73.

Required: the Chemistry option, page 173; and the professional courses listed on page 178.

FIRST GROUP

3-4 *Fundamentals of Physical Science (4-4)* Schimelpfenig

A year course: credit is not given for the first half until the second half is completed.

Academic year: lecture (3 hours)—morning, laboratory (3 hours)—afternoon.

Introduction to methods and achievements of physical science, covering selected topics in chemistry, physics, astronomy, and geology. For nonscience majors. Laboratory fee, \$11 a semester.

11-12 *General Chemistry (4-4)*

The Staff

A year course: credit is not given for the first half until the second half is completed.

Lecture (2 hours), laboratory (4 hours), recitation (1 hours).

First half: fall—morning, afternoon, and evening; spring—morning, afternoon, and evening; summer 1959. Second half: fall—afternoon, and evening; spring—morning, afternoon, and evening; summer 1960.

Elementary course in general chemistry. Prerequisite: one year of high school algebra. Laboratory fee, \$18 a semester.

21 *Qualitative Inorganic Analysis (4)*

Vincent

Lecture (2 hours), laboratory (4 hours).

Fall—afternoon and evening; spring—afternoon and evening; summer 1959.

Theoretical and practical study of methods of separating and identifying the more common cations and anions using semi-micro techniques. Prerequisite: Chemistry 12. Laboratory fee, \$18.

22 *Quantitative Inorganic Analysis I (4)*

Schmidt

Spring: lecture (2 hours)—morning and evening; laboratory (6 hours)—morning, afternoon, and evening. Summer 1959.

Theory and practice of quantitative analysis by typical volumetric and gravimetric procedures. Prerequisite: Chemistry 21. Laboratory fee, \$18.

SECOND GROUP

102 *Descriptive Inorganic Chemistry* (2)

White

Not offered 1959-60.

An intermediate level course emphasizing the descriptive chemistry of the elements. Prerequisite: Chemistry 22, 151.

111-12 *Physical Chemistry Lectures* (3-3)

Wood

A year course: credit is not given for the first half until the second half is completed.

Academic year—morning and evening.

Introduction to physical chemistry. Students registering for Chemistry 111-12 must register concurrently for Chemistry 113-14 unless they already have adequate credit for physical chemistry laboratory. Prerequisite: either (1) Chemistry 22 and 152, Mathematics 20, Physics 8; or (2) Chemistry 21, Mathematics 20, Physics 8 and 55.

113-14 *Physical Chemistry Laboratory* (2-2)

Wood

A year course: credit is not given for the first half until the second half is completed.

Academic year—afternoon and Saturday (morning and afternoon).

Laboratory to accompany Chemistry 111-12. Students registering for Chemistry 113-14 must register concurrently for Chemistry 111-12 unless they already have credit for lectures in physical chemistry. Laboratory fee, \$18 a semester.

122 *Quantitative Inorganic Analysis II* (4)

Schmidt

Fall: lecture (2 hours)—afternoon and evening; laboratory (6 hours)—morning and evening.

Continuation of Chemistry 22 including theory and practice of separations, organic reagents, electrochemistry, and colorimetry in analysis. Prerequisite: Chemistry 22. Laboratory fee, \$18.

131-32 *Inorganic Chemistry* (2-2)

Naeser

A year course: credit is not given for the first half until the second half is completed.

Academic year—evening.

Application of modern chemical theories to inorganic substances and reactions; detailed study, developed from the periodic table, of the descriptive chemistry of the more common elements. Prerequisite: Chemistry 152. Prerequisite or concurrent registration: Chemistry 111-12 and 113-14.

135-36 *Inorganic Chemistry: Preparations* (2-2)

Perros

First half: fall—morning; spring—evening. Second half: spring—evening.

Application of the technique of inorganic chemistry to the preparation and purification of a list of selected substances. Prerequisite: Chem-

istry 152. Prerequisite or concurrent registration: Chemistry 122.
Laboratory fee, \$18 a semester.

151-52 Organic Chemistry (4-4)

Sager, Wrenn

A year course: credit is not given for the first half until the second half is completed.

First half: fall—lecture (3 hours), morning and evening; laboratory (3 hours), afternoon and evening; summer 1959. Second half: spring—lecture (2 hours), morning and evening; laboratory (6 hours), afternoon and evening; summer 1959.

Chemistry of the compounds of carbon. Prerequisite*: Chemistry 21.
Laboratory fee: Chemistry 151, \$11; Chemistry 152, \$18.

155 Organic Chemistry: Preparations (2 or 3)

Wrenn

Spring—evening.

Synthesis of organic compounds and application of the technique of organic chemistry to the preparation of pure compounds, using larger amounts and greater refinements than in Chemistry 151-52. Prerequisite: Chemistry 22 and 152. Laboratory fee, \$10.50 a semester.

156 Qualitative Organic Analysis (3)

Schimelpfenig

Fall: lecture (1 hour), laboratory (6 hours)—evening.

Identification of pure organic compounds, separation of mixtures, and identification of their components. Required of all students planning thesis work in Organic Chemistry. Prerequisite: Chemistry 22 and 152. Laboratory fee, \$18.

191 History of Chemistry (2)

Perrin

Spring—evening.

Historical development of chemistry. Prerequisite: Chemistry 22 and 152.

193 Chemical Literature (1)

Wrenn

Fall—evening.

A general course in chemical literature with reference work and reports. Prerequisite: Chemistry 22 and 152. Prerequisite or concurrent registration: Chemistry 111-12 and 113-14.

THIRD GROUP†

Wood

203 Chemical Kinetics (2)

1959-60 and alternate years: spring—evening.

The rates of chemical reactions and the factors influencing them. Prerequisite: Chemistry 112.

* This prerequisite may be waived in the case of the student who has earned a grade of C or better in Chemistry 12 within the past two years.

† The appropriate qualifying examination is prerequisite to all advanced courses.

211-12 Physical Chemistry (1½-1½)

Wood

Academic year—morning and evening.

Same course as 111-12. Chemistry 211-12 may be taken for credit only by special permission. Credit will be assigned only upon the satisfactory completion of Chemistry 213.

213 Chemical Thermodynamics (3)

Wood

1959-60 and alternate years: fall—evening.

Application of thermodynamics to chemical problems. Thermochemistry, homogeneous and heterogeneous equilibria, statistical calculation of thermodynamic properties, electrochemistry. Prerequisite: grade of *A* or *B* in Chemistry 111-12, *Satisfactory* in 211-12, or qualifying grade in physical chemistry qualifying examination.

216 Statistical Mechanics (3)

Sager

1960-61 and alternate years.

An introduction to classical and quantum statistics designed to acquaint the student with the basic principles and application of the method. Prerequisite or concurrent registration: Chemistry 213, or permission of instructor.

221-22 Advanced Analytical Chemistry (2 or 3-2 or 3) Schmidt

Lecture (2 hours), laboratory (3 hours—optional).

First half: not offered 1959-60. Second half: fall—evening.

Theory and application of recent methods of analysis including electrical and optical instrumentation. Prerequisite: Chemistry 22 and 122. The lectures may be taken for 2 credits a semester without laboratory work; either half may be taken first. Laboratory fee, \$11 a semester.

231-32 Special Topics in Inorganic Chemistry: the Chemistry of the Less Familiar Elements (2-2)Perros,
White

1959-60 and alternate years: academic year—evening.

First half: the lanthanide and actinide elements, emphasis on metallurgy and chemistry; platinum metals, emphasis on complex ion formation. Second half: certain hydrides, organometallic and organosilicon compounds, and metal carbonyls; chemistry and uses of less common elements such as germanium and gallium. Prerequisite: Chemistry 132 and 152.

233-34 Radiochemistry (2-2)

Hollbach

1959-60 and alternate years: academic year—evening.

The preparation, properties, and uses of radioactive isotopes, both natural and artificial. Prerequisite: Chemistry 131-32.

251-52 Advanced Organic Chemistry (3-3)

Sage

Academic year—evening.

Syntheses, reactions, and properties of carbon compounds; fundamental theories of organic chemistry. Prerequisite: Chemistry 151.

Prerequisite or concurrent registration: Chemistry 111-12, 113-14.

253 Advanced Synthetic Organic Chemistry (3)

Wren

Fall—evening.

Study of reactions employed in the synthesis of organic compounds.

Prerequisite: Chemistry 251.

257 Theoretical Organic Chemistry (3)

Sage

1959-60 and alternate years: fall—evening.

Survey of modern theories of organic chemistry with emphasis on reaction mechanisms. Prerequisite: Chemistry 252.

291-92 Seminar: Recent Developments in Chemistry (1-1)

The Staff

Academic year—late afternoon.

Continuous active participation in this seminar is required of all students registered for graduate degrees in Chemistry. Master's candidates obtain credit—2 semester hours—in the last two semesters of residence.

295-96 Research (arr.)

The Staff

Academic year—as arranged; summer 1959.

Research on problems approved by the Staff. Open to qualified students with advanced training. Laboratory fee, \$7.50 a semester hour.

299-300 Thesis (3-3)

The Staff

Academic year—as arranged; summer 1959.

Laboratory fee, \$18 a semester.

CIVIL ENGINEERING

- Carl Hugo Walther, B.E., M.C.E., *Professor of Civil Engineering*
 Martin Alexander Mason, B.S. in Eng., Ing.-Dr., *Professor of Civil Engineering*
 Robert Aaron Hechtman, M.S. in C.E., Ph.D., *Professor of Civil Engineering, Executive Officer*
 Waldo Edward Smith, B.E. in C.E., M.S. in C.E., *Professorial Lecturer in Civil Engineering*
 Melvin Raymond Meyerson, M.S. in Met.E., *Professorial Lecturer in Civil Engineering*
 Ralph Edward Fuhrman, B.S. in C.E., M.S. in Eng., D.Eng., *Professorial Lecturer in Civil Engineering*
 Charles Henry Conrad, B.S. in Arch., *Professorial Lecturer in Civil Engineering*
 Galip Mehmet Arkilic, Ph.D., *Associate Professor of Civil Engineering*
 Robert Alexander Hemmes, M.S., *Assistant Professor of Civil Engineering*
 Robert Emerson Moffat, B.E. in C.E., M.C.E., *Lecturer in Civil Engineering*
 Phillip Wonn Mast, B.C.E., *Instructor in Civil Engineering*

Bachelor of Civil Engineering (School of Engineering).—See pages 144-48 for statement of requirements.
Master of Science in Engineering (School of Engineering).—See pages 150-54 for statement of requirements.

FIRST GROUP

12 Surveying (3)

Mast

Spring: lecture (2 hours), field work (2 hours)—Saturday.

Principles, methods, and instruments used in making space measurements, including layout, elements of simple curves, coordinate systems, and treatment of observational errors. Prerequisite: Mathematics 12. Mechanical Engineering 10. Surveying fee, \$13.

21 Statics (3)

The Staff

Fall—morning and evening; spring—evening.

Composition and resolution of forces in two and three dimensions; equilibrium; centroids, centers of gravity, moments of inertia; friction; analysis of trusses, frames, and cables; shear and bending moment in beams; virtual work. Prerequisite: Physics 14. Prerequisite or concurrent registration: Mathematics 31.

The Staff

24 Strength of Materials (3)

Fall—evening; spring—morning and evening; summer 1959.

Development and application of principles necessary to analyze stresses in and deformation of simple machine and structural components; combined stresses, strain energy, buckling of columns and beams; design of simple members and joints, composite members. Prerequisite: Civil Engineering 21, Mathematics 31.

SECOND GROUP

The Staff

121 Dynamics (3)

Fall—morning and evening; spring—evening.

Kinematics; kinetic friction; translation, rotation, and plane motion of rigid bodies and systems; work; energy; power; impulse; momentum; impact; simple vibrations. Prerequisite: Civil Engineering 21, Mathematics 111.

125 Engineering Materials (4)

Murdaugh, Mast

Fall: lecture—morning and evening; laboratory—afternoon and evening.

Mechanical behavior of engineering materials; including mechanical testing, elasticity, plasticity, fracture, ductility, creep, and fatigue; elements of metallurgy and physics of metals. Prerequisite: Chemistry 12, Physics 16, Civil Engineering 24. Laboratory fee, \$11.

128 Substructures (3)

The Staff

1959-60 and alternate years: spring—evening; 1960-61 and alternate years: spring—afternoon.

A limited study of substructure materials including soils and rocks and their properties as foundation material; seepage; plastic equilibrium; lateral earth pressures, bearing capacity, and settlement; analysis of simple substructures. Prerequisite: Civil Engineering 125, 144.

132 Fluid Mechanics (3)

Mason, Hemmes, Moore

Spring: lecture—morning and evening; laboratory—afternoon and evening.

Development of the fundamental principles of flow of viscous and ideal compressible and incompressible fluids; dimensional analysis and model theory; laboratory work emphasizes principles, analysis of tests, and systematic observations of phenomena. Prerequisite: Mathematics 111, Civil Engineering 121, Mechanical Engineering 113. Laboratory fee, \$11.

The Staff

135 Hydraulic Engineering (3)

Fall—evening.

Applied fluid mechanics, hydrology, principles of water conservation, introduction to flood control, water power, drainage and irrigation.

canalization of rivers, multiple-purpose projects, and general development of water resources. Prerequisite: Civil Engineering 132.

138 Sanitary Engineering (3)

The Staff

Spring—evening.

Collection, storage, purification, and distribution of water; sewerage systems and treatment of sewage. Prerequisite: Chemistry 12, Civil Engineering 135.

143-44 Structural Theory I-II (4-4)

Walther, Hechtman

1959-60 and alternate years: academic year—evening; 1960-61 and alternate years: academic year—afternoon.

Theory and structural behavior of statically determinate and indeterminate beams, frames, trusses, and arches, and the application of basic principles to their analysis; structural laboratory including structural model analysis. Prerequisite or concurrent registration: Civil Engineering 125. Laboratory fee, \$11 a semester.

145 Metal Structures (3)

Hechtman, Walther

1959-60 and alternate years: spring—afternoon; 1960-61 and alternate years: spring—evening.

Application of structural theory to the analysis and design of metal structures under static and moving loads. Prerequisite: Civil Engineering 144, 157.

146 Reinforced Concrete (3)

Hechtman, Walther

1959-60 and alternate years: fall—afternoon; 1960-61 and alternate years: fall—evening.

Theory and design of plain and reinforced concrete structures. Prerequisite: Civil Engineering 144. Prerequisite or concurrent registration: Civil Engineering 157.

154 Structural Dynamics (3)

Arkilic

1959-60 and alternate years: spring—evening; 1960-61 and alternate years: spring—afternoon.

Theory of mechanical vibrations; vibrations in and dynamic loading on structures. Prerequisite: Civil Engineering 144, Mathematics 112.

157 Advanced Strength of Materials (3)

Arkilic, Hechtman

1959-60 and alternate years: fall—evening; 1960-61 and alternate years: fall—late afternoon.

Selected topics in mechanics of deformable bodies, including: stresses at a point, general flexure, bending of curved beams, torsion, stress concentration, limitations of theories of failure, thick tubes, energy methods, plates and shells, and deformations beyond the elastic limit. Prerequisite: Civil Engineering 125, Mathematics 112. Prerequisite or concurrent registration: Civil Engineering 144 or Mechanical Engineering 121.

- 163 *Transportation Engineering* (3) The Staff
 Fall—evening.
 Economics, location, construction, operation, and maintenance of transportation systems. Prerequisite: Civil Engineering 12, 125, senior standing or permission of the instructor.
- 168 *Regional and Urban Planning* (3) The Staff
 Spring—evening.
 Introduction to regional and urban planning with emphasis on requirements for transportation systems. Prerequisite: Civil Engineering 12, 125, senior standing or permission of the instructor.
- 195-96 *Problems in Civil Engineering* (arr.) The Staff
 Academic year—as arranged.
 Special problems approved by the Staff. Prerequisite: senior standing.

THIRD GROUP

- 224 *Plates and Shells* (3) Arkilic
 1960-61 and alternate years: spring—evening.
 Pure bending of flat plates, laterally loaded flat plates, flat rectangular plates with various edge conditions, bending of flat plates under combined lateral and transverse loads, shells.
- 226 *Plasticity of Solids* (3) Arkilic, Hechtman
 1959-60 and alternate years: fall—evening.
 Plastic flow and fracture of solids; theory of perfectly plastic solids including basic concepts, plastic deformation of simple trusses, beams, and plane strain problems; theory of fracture.
- 251 *Theory of Structures* (3) Hechtman
 Spring—evening.
 Classical and modern methods of structural analysis; basic theory of plane structures; statically indeterminate structures, including continuous beams and trusses and arches; limit-load analysis; special problems.
- 252 *Space Structures* (3) Hechtman
 1960-61 and alternate years.
 Theory of structures in three dimensions: trusses, rigid frames, thin-shell structures.
- 256 *Theory of Elastic Stability* (3) Hechtman
 Not offered 1959-60.
 Beam-column problems and methods of analysis (including numerical analysis); lateral buckling of beams; buckling of rigid frames, plates, stiffened flat plates, and shells; buckling of arches.

ENGINEERING SCIENCE

The following courses serve as foundations for specialization, since they are concerned with a body of knowledge applicable in a variety of engineering fields.

SECOND GROUP

154 *Automatic Control** (4) Crafton, Depian

Spring—morning and evening.

Theory of automatic control systems including electromechanical, pneumatic, and hydraulic systems. Transient analysis, transfer functions, stability criteria. Experimental study of automatic control systems. Laboratory fee, \$11. Prerequisites: Electrical Engineering 127 or Mechanical Engineering 123.

THIRD GROUP

201 *Automatic Control* (3) Crafton

Fall—evening.

Advanced theory of automatic control. Systems analysis, multiple-loop systems, nonlinear systems.

203 *Operational Analysis of Linear Systems* (3) ———

Fall—evening.

Transient analysis of linear, lumped-parameter electrical and mechanical systems by operational methods with emphasis on Laplace transforms.

211 *Analysis of Engineering Systems I* (3) Depian, Arkilic

Fall—evening; spring—evening.

Application of mathematical principles to physical systems in civil, electrical, and mechanical engineering. Mathematical methods are emphasized. Mathematical topics include partial differential equations and boundary-value problems, Fourier series, integral, and transform; coordinate systems, orthogonal functions.

212 *Analysis of Engineering Systems II* (3) Arkilic

Spring—evening.

Continuation of Engineering Science 211. Mathematical topics include functions of complex variables, operational and transform methods, numerical solutions of differential equations, finite differences, matrices.

* An undergraduate course which may be taken for graduate credit with the approval of the Committee on Graduate Studies.

217 *Analytical Mechanics* (3)

Crafton

Fall—evening; spring—evening.

Fundamental principles, generalized coordinates, variational principles and Lagrange's equations, nonholonomic systems, Hamilton's equations, theory of small oscillations.

220 *Nonlinear Mechanics* (3)

Crafton

Spring—evening.

Topological and analytical methods in nonlinear mechanics, nonlinear resonance, relaxation oscillations.

221 *Theory of Elasticity* (3)

Arkile

Fall—evening.

Stress and strain at a point; differential equations of equilibrium; boundary conditions, compatibility equations, and stress functions; two-dimensional problems in rectangular and curvilinear coordinates; strain energy methods; elementary three-dimensional problems; torsion and bending of prismatic bars; thermal stress.

231 *Fluid Dynamics* (3)

Fall—evening.

Theory of compressible and incompressible fluid motion including potential motion, circulation and vorticity, mathematical treatment of flow at sub-, trans-, and supersonic velocities, normal and oblique shock, and elements of heat transfer.

299-300 *Master's Problem* (3-3)

The Staff

Academic year—as arranged; summer 1959

CLASSICAL LANGUAGES AND LITERATURES

John Francis Latimer, Ph.D., *Professor of Classical Languages and Literatures, Executive Officer*

The Department of Classical Languages and Literatures offers two types of courses: (1) the course on *Greek and Roman Backgrounds in Literature*, which illustrates the literary, linguistic, and cultural backgrounds of Western Civilization, and for which no knowledge of the ancient languages is required. This course is designed to supplement and strengthen the broad general backgrounds of students who plan to concentrate in the fields of English or other literatures, History, Art, Drama, or Philosophy, or of those who wish to increase their general knowledge and appreciation of the bases of the great humanistic traditions as part of a well-rounded education. (2) Two years of Latin and two years of Greek are offered. These courses may be elected in fulfillment of the language requirements of the Junior College as set forth on pages 60-70.

COURSE IN ENGLISH TRANSLATION

71-72 *Greek and Roman Backgrounds in Literature* Latimer
(3-3)

1960-61 and alternate years.

Selected Greek and Roman masterpieces and their literary influence.

LANGUAGE COURSES

1-2 *First-year Latin* (3-3) Latimer

A year course; credit is not given for the first half until the second half is completed.

1959-60 and alternate years: academic year—evening.

Functional presentation of the essentials of the language, with appropriate reading selections. Development of English derivatives, and introduction to Roman life and literature.

3-4 *Second year Latin* (3-3) Latimer

A year course; credit is not given for the first half until the second half is completed.

Not offered 1959-60.

A continuation of the preceding course, but with increased emphasis on reading Latin selections which illustrate Roman life and literature.

Continuation of vocabulary building in English. Prerequisite: Classical Languages 1-2 or two years of high school Latin.

11-12 *First-year Greek* (3-3) Latimer

A year course; credit is not given for the first half until the second half is completed.

Not offered 1959-60.

Essentials of grammar. Appropriate reading selections.

13-14 *Second-year Greek* (3-3)

Latimer

A year course: credit is not given for the first half until the second half is completed.

1959-60 and alternate years: academic year—evening.

Review of grammar. Emphasis on rapid reading from selected Greek authors.

RELATED COURSES IN ANOTHER DEPARTMENT

Art 101 *Ancient Art* (3)

Art 102 *Medieval Art* (3)

DERMATOLOGY AND SYPHILOLOGY

- Harry Ford Anderson, M.D., *Professor of Dermatology and Syphilology, Executive Officer*
 Hayden Kirby-Smith, B.S., M.D., *Assistant Clinical Professor of Dermatology and Syphilology*
 James Quincy Gant, Jr., M.S., M.D., *Assistant Clinical Professor of Dermatology and Syphilology*
 Wendell Melvin Willett, A.B., M.D., *Associate in Dermatology and Syphilology*
 Reuben Goodman, M.D., *Associate in Dermatology and Syphilology*
 Crawford Southwell Brown, A.B., M.D., *Clinical Instructor in Dermatology and Syphilology*
 Manuel Landman, B.S., M.D., *Clinical Instructor in Dermatology and Syphilology*
 William George Ballinger, A.B., M.D., *Clinical Instructor in Dermatology and Syphilology*

214 *Dermatology and Syphilology*

The Staff

Fall—1 hour a week.

Lectures on diseases of the skin and syphilis

317-18 *Clinic*

The Staff

Two weeks in rotation as arranged during academic year.

Case demonstrations, diagnosis, and treatment of skin diseases and syphilis. D. C. General Hospital.

407-8 *Clinic*

The Staff

Two hours a week as arranged in rotation during academic year.

Dermatology and syphilology in infants and children. Children's Hospital.

409-10 *Clinic*

The Staff

Two hours a week as arranged in rotation during academic year.

Clinical demonstrations, diseases of the skin. University Hospital.

ECONOMICS

Arthur Edward Burns, Ph.D., Professor of Economics

Arthur Edward Burns, Ph.D., *Professor of Economics*
Donald Stevenson Watson, Ph.D., *Professor of Economics, Executive Officer*
J. H. D. Ph.D., *Professor of Labor Economics*

Donald Stevenson Watson, Ph.D., 1907
Officer
 Thomas Willard Holland, LL.B., Ph.D., *Professor of Labor Economics*
 Gerhard Colm, Dr. rer. pol., *Professorial Lecturer in Economics*
 John H. Young, Ph.D., *Professorial Lecturer in Economics*

Ralph Aubrey Young, Ph.D., *Professorial Lecturer in Economics*
 H. H. Hays, Jr., M.A., *Professorial Lecturer in Economics*

Edward Campion Acheson, Ph.D., Associate Professor of Finance

John Whitefield Kendrick, Ph.D., Associate Professor of Economics

*Wilson Emerson Schmidt, Ph.D., Associate Professor of Economics
John William Skinner, Ph.D., Assistant Professor of Economics

John William Skinner, Ph.D., *Assistant Professor of Economics*
Richard Raynor MacNabb, A.M., *Lecturer in Economics*

Bachelor of Arts with a major in Economics (Columbia College—In mental).—Prerequisite: the Arts and Letters curriculum in the Junior College including Economics 1, 2 and Statistics 51, see page 70.

[illegible]

which may be taken upon the completion of the following statistics 111, 112; (4) nine semester hours of other second-group courses from the following departments—Accounting, Business and Public Administration, Economics, Education, English, Geography, History, Philosophy, Political Science, Sociology and Anthropology, and Social Science; (5) a minimum of 12 semester hours of approved courses in Latin American Civilization (Columbia University).

Bachelor of Arts with a major in Latin American Civilization (Columbia College—Field-of-Study).—See the Department of History

Master of Arts in the field of Economics (Columbia College).—The degree of Bachelor of Arts with a major in Economics at this University is the equivalent.

Required: the general requirements of Columbian College. Students must complete 91-95. The thirty hours of required work must include (1) Economics 215, 216, 251; (2) nine semester hours in courses numbered 201-238, 213, 215, 216, 251; (3) nine semester hours in two of the following fields: public finance, monetary and policy (Economics 223-24, 261-62); labor economics (Economics 241, 244, 250); economic policy (Economics 265, 266); international relations (Economics 259, 262); and (4) thesis (Economics 299-300).

Bachelor of Arts in Government with courses in Economics (School of Government) — See pages 191-96

Government).—See pages 193-96
Master of Arts in Government with a major in Economics (Economics and Government).—Prerequisite: the degree of Bachelor of Arts with a major in Economics at this University, or the equivalent
 The requirements for the degree are stated on pages 193-96

The thirty hours of required work must include Economics 210, 265, 290, and thesis, Economics 299-300. The Master of Arts curricula in the School of

For information concerning other Master of Arts curricula in the Department with courses in Economics, see pages 302-4.

• On sabbatical leave spring semester 1959-60

FIRST GROUP

1-2 *Principles of Economics** (3-3) Skinner and Staff

Lecture (2 hours), recitation (1 hour).

First half: fall—morning and evening; spring—morning and evening; summer 1959. *Second half:* fall—evening; spring—morning and evening; summer 1959.

Survey of the major economic principles, institutions, and problems in contemporary life. Economics 1 is prerequisite to Economics 2.

SECOND GROUP

101-2 *Economic Analysis* (3-3) The Staff

First half: fall—morning; spring—evening; summer 1959. *Second half:* spring—morning and evening.

Analysis of demand, supply, and commodity pricing; theory of national income determination; pricing of productive services, welfare economics. Economics 101 is prerequisite to Economics 102.

104 *History of Economic Thought* (3) Burns

Not offered 1959-60.

History of the major schools of economic thought; influence of changing problems on the development of economic theory.

105 *Business Cycles* (3) Kendrick

Fall—morning.

Analysis of strategic factors in economic instability, survey of recent business cycle theories.

121 *Money and Banking* (3) Acheson

Fall—morning and evening; spring—evening; summer 1959.

Theory of money, credit, and banking; commercial banking and the Federal Reserve System; other financial institutions; international aspects of money; current financial problems.

123 *Monetary Theory and Policy* (3) Acheson

Fall—morning.

Principal contemporary theories, background of recent monetary policy.

124 *Financial Institutions and Economic Development* (3) Acheson

Fall—evening.

Evolution and growth of the money-mechanism in United States economy, changing relationships of money markets to role of investment,

* Economics 1-2 is prerequisite to all other courses in Economics.

- special emphasis on monetary framework for national economic development.
- 126 *Foreign Exchange and International Finance* (3) Acheson
Spring—morning.
The theory and practice of the foreign exchanges; current methods of international transfer.
- 133 *The Economy of the Soviet Union* (3)
Not offered 1959-60.
Development and main features of the economic life of the Soviet Union (See History 146, 246, and Geography 191).
- 141 *Industrial Relations* (3)
Fall—morning.
Development and practice of collective bargaining in American industry. Public control of industrial relations. Holland
- 142 *Labor Economics* (3)
Spring—morning.
Wages, hours, and employment; standards of living; public policy. Holland
- 161-62 *Public Finance and Taxation* (3-3)
1959-60 and alternate years: academic year—morning; 1960-61 and alternate years: academic year—evening.
General survey of government expenditures; sources and methods of taxation; economic effects of expenditures, taxes, and of government debt policies. Schmidt
- 165 *Government Control of Economic Activity* (3)
Fall—evening.
Changing role of government in promoting and regulating economic activity, types and spheres of control. Watson
- 166 *Comparative Systems of Economic Reform* (3)
Not offered 1959-60.
Critical analysis of the major theories of economic and social reform with special attention to their origins and backgrounds. Watson
- 181-82 *International Economics* (3-3)
Academic year—afternoon and evening; summer 1959—Economics 181 (3). Schmidt
Survey of world economics, theories of international trade, analysis of international economic problems, and the international organizations.

- 183-84 *International Economic Policy* (3-3) Acheson
Not offered 1959-60.

Historical and theoretical analysis of tariffs, exchange rates, exchange and trade control, discrimination, and capital movements; policies related thereto.

- 185-86 *Economic History and Problems of Latin America* (3-3)

Academic year—evening.

Evolution of the economies of Latin America with particular emphasis on present structures and problems, considered in the regional, country, and sub-region contexts. Economics 185, special attention to Middle America; Economics 186, special attention to South America.

- 198 *Proseminar in Economics* (3) Skinner

Fall—as arranged; spring—as arranged.

Comprehensive survey of economics. Prerequisite: Economics 101-2 and 121.

THIRD GROUP

- 201-2 *History and Literature of Economic Thought* (3-3) Burns

Academic year—evening.

Critical analysis and interpretation of the development and the literature of economic thought, origins, and problems, of the major types of theory, and their relation to present problems and policies.

- 203-4 *Contemporary Economic Theory* (3-3) Watson

Academic year—evening.

The contributions of Marshall, Chamberlin, Robinson, Hicks, and others.

- 205 *Theory of Employment and Income* (3) Kendrick

Fall—evening.

Determinants of the level of employment and income. Keynesian and classical systems contrasted, and recent literature on the subject.

- 206 *Business Cycle Theory* (3) Kendrick

Spring—evening.

The general characteristics of business cycle theories and discussion of particular theories.

- 208 *The National Income* (3) Kendrick

Fall—evening.

The theory of economic aggregates; measurement and policy aspects of national income.

- 210 *Seminar in Economics* (3) Skinner
 Spring—evening.
 Integration of economic theories; methods of research. Open only to students who have completed fifteen hours of graduate work in economics.
- 211 *Readings in Advanced Economics* (3) Burns and Staff
 Fall—as arranged.
 Integration and coordination of advanced economic theories.
- 213 *Economic Thought in the Twentieth Century* (3) Burns
 Summer 1959.
 Continuation of Economics 201-2. The principal trends in economic thought during the present century.
- 215 *Introduction to Mathematical Economics* (3) _____
 Fall—evening.
 The mathematics of partial and general equilibrium theory. Prerequisite: permission of the instructor.
- 216 *Input-Output Analysis* (3) _____
 Spring—evening.
 Leontief's theory and subsequent development. Input-output models. Empirical methods and problems. Applications.
- 219 *Managerial Economics* (3) Watson
 Summer 1959.
 Analysis of price, production, and inventory policies of business firms.
- 223-24 *Monetary Policy and Central Banking* (3-3) Young
 Academic year—evening.
 The money system in its relation to national income; monetary policies of the Federal Reserve and other central banking systems.
- 241 *Labor Economics* (3) Holland
 Fall—evening.
 Implications of industrialism for labor, questions of social policy, contributions of economics to solutions of labor problems.
- 244 *Collective Bargaining* (3) Holland
 Spring—evening.
 The collective bargaining contract and the elements comprising it; analysis of the policies of labor and of management.

- 246 *Foreign Labor Movements* (3) Holland
Spring—evening.
Labor in the economic, social, and political structures of selected foreign countries. Contrasts and comparisons with the United States.
- 251 *Theories of Economic Development* (3) Shenefield
Summer 1959.
Growth and change in economic activity, capital accumulation, innovations in technology and business organization.
- 253 *Productivity Analysis* (3) Kendrick
Not offered 1959-60.
Concepts and measures of productivity; relations to economic growth and to structural changes in the American economy.
- 261-62 *Public Finance and Fiscal Policy* (3-3) Colm
Academic year—evening.
Survey of the major contributions to the theory and doctrines of public finance. Special problems: budget problems; current tax problems; and federal, state, and local relationships.
- 265 *Theory of Economic Policy* (3) Watson
Fall—evening.
The nature, forms, methods, and objectives of economic policy; the relation of economic theory to economic policy.
- 266 *Problems of Governmental Economic Policy* (3) Watson
Spring—evening.
The execution of economic policies as they are affected by the processes of government.
- 267 *Economic Organization of the Communist Orbit* (3) Heymann
Fall—evening.
Development of the Soviet-type economy; organization under the Soviets; policies and problems: monetary, fiscal, production, allocative, foreign trade, economic growth. (See also History 146, 246, and Geography 196.)
- 281-82 *International Economics* (3-3) Schmidt
Academic year—evening.
The modern theories of international economics, the variables determining the balance of payments, techniques to obtain balance-of-payments equilibrium.

- 284 *United States Foreign Economic Policy* (3) Schmidt
Not offered 1959-60.
Analysis of foreign aid program; international, commercial, and monetary policy of the United States; United States and international economic organization.
- 285-86 *Economic Development of Latin America* (3-3)
Not offered 1959-60.
Current policies and programs, capital formation, public and private foreign loans and investment; social and technological preconditions for investment.
- 287-88 *Latin America: Trade and Commodity Policy* (3-3)
Not offered 1959-60.
Tariffs and exchange control systems, bilateral and general commercial agreements, terms of trade.
- 290 *Problems in International Financial Policy* (3) Acheson
Spring-evening.
International financial problems in recent decades and analysis of internal economic problems of several countries.
- 299-300 *Thesis* (3-3) The Staff
Academic year—as arranged; summer 1959.

COURSE OFFERED IN SPECIAL PROGRAMS

In addition to the regular courses announced above, the University offers the following course for students enrolled in the Navy Graduate Comptrollership Program and the Air Force Advanced Management Program.

- 191 *Foreign Economic Policies and Problems* (3) Schmidt
195 *Governmental and Industrial Economics* (3) Wicks

EDUCATION

- James Harold Fox, A.M., Ed.D., *Professor of Education*
 Burnice Herman Jarman, A.M., Ed.D., *Professor of Education*
 Blake Smith Root, A.M., Ed.D., *Professor of Education, Executive Officer*
 Anthony Charles LaBue, B.S., Ed.D., *Professor of Education*
 Grover LaMarr Angel, A.M., Ed.D., *Professor of Education*
 Ray LaForest Hamon, Ph.D., *Professorial Lecturer in Education*
 John Frederick Brougher, A.M., Ed.D., *Professorial Lecturer in Education*
 Madaline Kinter Remmlein, Ph.D., J.D., *Professorial Lecturer in Education*
 Joseph Bueol Johnson, A.M., Ed.D., *Professorial Lecturer in Education*
 Florence Mary Lumsden, A.M., Ed.D., *Professorial Lecturer in Education*
 Howard Odin Johnson, A.M., Ed.D., *Professorial Lecturer in Education*
 Anthony Marinaccio, Ph.D., *Professorial Lecturer in Education*
 Clayton Hutchins, Ph.D., *Professorial Lecturer in Education*
 Kenneth Brown, Ph.D., *Professorial Lecturer in Education*
 John Holden, Ph.D., *Professorial Lecturer in Education*
 Charles Koelsche, M.S., Ed.D., *Professorial Lecturer in Education*
 Barnard DeJean Joy, A.M., Ed.D., *Professorial Lecturer in Education*
 Mary Ellen Coleman, A.M., *Associate Professor of Education*
 John Carl Lang, A.M., Ed.D., *Associate Professorial Lecturer in Education*
 LuVerne Crabtree Walker, A.M., *Associate Professorial Lecturer in Education*
 Raymond Ray Reed, A.M., *Associate Professorial Lecturer in Education*
 Eugenia Campbell Nowlin, A.M., *Associate Professorial Lecturer in Education*
 Gladys Gardner Jenkins, A.M., *Associate Professorial Lecturer in Education*
 Carol Ruth St. Cyr, Ph.D., *Assistant Professor of Education*
 William Andrew McCauley, Ph.D., *Assistant Professor of Education*
 Harry Grubb Detwiler, A.M., *Assistant Professor of Education*
 Robert Edward Baker, A.M., A.M. in Ed., *Assistant Professor of Education*
 Levin Bartow Hanigan, B.S., Ed.D., *Lecturer in Education*
 John Giancaspro, A.M. in Ed., *Lecturer in Education*
 Beverly Anderson Crump, B.S., Ed.M., *Lecturer in Education*
 Zella Mills Huse, A.M., *Lecturer in Education*
 James Whitley Suber, A.M., Ed.D., *Lecturer in Education*

James Walter Tyler, A.M., Ed.D., *Lecturer in Education*
 Ward Whipple, A.M., *Lecturer in Education*
 Hazel Emma Wilson, A.M., *Lecturer in Education*

FIELD STUDIES

Jerry Aughern Rice, Jr., M.S., *Director of Field Studies*

Field Service Coordinators

Alexander Anderson, A.M., *Assistant Principal, Washington-Lee High School, Arlington, Virginia*
 Mary Foust Maré, A.M., *Assistant Principal and Dean of Girls, Wakefield High School, Arlington, Virginia*
 Claud Manby Richmond, B.S., A.M., *Principal, Stratford Junior High School, Arlington, Virginia*

Bachelor of Arts in Education (School of Education).—Prerequisite: the Education curriculum in the Junior College or the equivalent, or a certificate of graduation from an approved normal school or the equivalent, see page 72-73.
 Required: the satisfactory completion of a program of at least sixty-six semester hours in addition to the general education background courses in the Junior College curriculum. Each program is planned individually to meet the certification requirements of the student, see pages 169-79.

Master of Arts in Education (School of Education).—Prerequisite: a Bachelor's degree from an accredited institution. Programs are planned individually in the following areas of specialization are available: (1) school administration; (2) adult education; (3) secondary school principalship; (4) elementary school principalship; (5) curriculum; (6) curriculum; (7) employee training; (8) guidance; (9) physical education; (10) reading; (11) teacher education. (See pages 184-87.)

Advanced Professional Certificate (School of Education).—See pages 186-87.

Doctor of Education (School of Education).—See pages 186-87.

A Reading Clinic

Diagnosis of reading difficulties; individual or group lessons with academic credit. Fee: for diagnosis, \$30; for individual lesson, \$25; for semi-individual lesson, \$3; for small group lesson, \$2.50; material fee, \$4.

SECOND GROUP

109-10 Human Development, Learning, and Teaching (3-3)

Lecture (2 hours), conference (1 hour), field work (2 hours) arranged.
First half: fall—afternoon and evening; summer 1959. *Second half:* fall—afternoon; spring—afternoon and evening; summer 1959.

For the general student as well as the prospective teacher. First half: nature of human growth, development, and learning; illustrations.

observation of children in learning situations. *Second half*: nature of teaching based upon principles of human growth, development, and learning, illustrated by observation of school situations.

111 *Methods in Elementary Education* (12) Baker and Staff

Fall—Monday through Friday mornings.

For seniors in the elementary school curriculum. Methods, materials, appraisal, and field experiences in elementary schools. Problems and procedures in teaching the language arts (including reading, literature for children, oral and written expression, spelling, and handwriting), arithmetic and science, social studies. Planning units of work, general classroom procedures, and evaluation of pupil progress. Observation and participation two mornings a week. Prerequisite: Education 109-10 and 121-22.

112 *Guidance in Elementary Schools* (3)

McCauley

Fall—afternoon.

Scope, needs, services to students, selection and construction of teacher-made tests, interpretation of tests for evidence purposes. Prerequisite: Education 109-10, 121-22.

113 *Elementary School Art* (3)

Nowlin

Fall and spring: lecture and laboratory (3 hours)—evening, field work—as arranged; summer 1959.

For undergraduates in the elementary school curriculum. Materials and methods. Prerequisite: Psychology 1 and 22. Material fee, \$4.50.

114 *Elementary School Music* (3)

Reed

Fall: lecture (2 hours)—evening, field work (2 hours)—as arranged.

For undergraduates in the elementary school curriculum. Materials and methods. Prerequisite: Psychology 1 and 22.

115 *Teaching of Reading in the Elementary School** (3)

Hanigan

Spring: lecture (2 hours)—evening, field work (2 hours)—as arranged; summer 1959.

A basic course in methods, techniques, materials, and activities essential to a good elementary school reading program. Prerequisite: Education 109-10 and 121-22 or teaching experience.

116 *Elementary School Social Studies** (3)

Fall: lecture (2 hours)—evening, field work (2 hours)—as arranged.

For teachers. Content, methods, materials, and activities essential in the elementary school curriculum. Prerequisite: Education 109-10 and 121-22 or teaching experience.

* This course may not be taken by students who have completed or who plan to enroll in Education 121.

117 *Elementary School Science** (3)

St. C

Spring: lecture (2 hours)—evening, field work (2 hours)—as arranged; summer 1959.

For teachers. Content, methods, materials, and activities essential in the elementary school curriculum. Prerequisite: Education 100 and 121-22 or teaching experience.

120 *Elementary School Arithmetic** (3)

Spring: lecture (2 hours)—evening, field work (2 hours)—as arranged; summer 1959.

For teachers. Content, methods, materials, and activities essential in the elementary school curriculum. Prerequisite: Education 100 and 121-22 or teaching experience.

121-22 *Society and the School* (3-3)

St. C

Lecture (2 hours), conference (1 hour), field work (2 hours)—as arranged.

First half: fall—afternoon and evening; summer 1959. Second half: spring—afternoon; summer 1959.

For the general student as well as the prospective teacher. First half: the historical and sociological development of education at local, national, and international levels; cooperation of the school with community agencies. Second half: organization and operation of schools; principles and functions; role of the teacher.

128 *Children's Literature** (3)

Walt

Spring: lecture (2 hours)—evening, field work (2 hours)—as arranged; summer 1959.

For teachers. Exploring and evaluating the newer books for children and the children's classics, understanding the contribution of literature in child development, appreciating children's original expressions. Prerequisite: Psychology 1 and 22.

131 *Common Teaching Skills in Secondary Schools* (3)

Dern

Fall—early afternoon; spring—late afternoon.

For seniors in the secondary school curriculum. Course, unit, and lesson planning, practical techniques used in connection with motivation, the assignment, group procedures, directing study, individual differences, evaluation, clerical routines, disciplines, the home, activity sponsorship, public relations. Prerequisite: Education 100 and 121-22.

* This course may not be taken by students who have completed or who plan to complete Education 100.

**133-34 Observation and Student Teaching in
Secondary Schools (3-3 to 6)**

Detwiler

A year course; credit is not given for the first half until the second half is completed.

133A: fall—as arranged; 133B: spring—as arranged. 134A and 134B: spring—as arranged.

For seniors in the secondary school curriculum. Section B is for students enrolled in the intensive program. Education 134 student-teaching fee, \$50. Admission by permission of the instructor. Prerequisite: Education 109-10 and 121-22.

**135 Student Teaching in Elementary
Schools (9)**

Baker, McCauley

135A, 135B, and 135C: spring—as arranged.

For seniors in the elementary school curriculum. Education 135 student-teaching fee, \$50. Admission by permission of the instructor. Prerequisite: Education 109-10 and 121-22.

SPECIAL METHODS COURSES*

To be elected in the senior year after substantial preparation in the teaching fields concerned by the students in the secondary school curriculum. Course requirements and hours of credit vary with license requirements. Practices of successful teachers are studied and actual teaching content as found in current texts and courses of study is reviewed.

136 Teaching English (2 to 4)

Lumsden

Spring: lecture (2 hours)—evening, field work (2 hours)—as arranged.

Prerequisite*: eighteen semester hours in English.

138 Teaching Social Studies (2 to 4)

Whipple

Spring: lecture (2 hours)—evening, field work (2 hours)—as arranged.

Prerequisite*: twenty-four semester hours of social studies.

140 Teaching Mathematics (3)

Brown

Spring—evening.

Prerequisite*: Mathematics through calculus.

144 Teaching Science (2 to 4)

Koelsche

Spring: lecture (2 hours)—evening, field work (2 hours)—as arranged.

Prerequisite*: twenty-four to forty semester hours of science.

146 Teaching Foreign Languages (2 to 4)

McSpadden

Spring—late afternoon.

Prerequisite*: eighteen semester hours of one foreign language.

* Prerequisite to all special methods courses: Education 109-10, 121-22, and 123. Additional prerequisites are stated under each course.

148 *Teaching Home Economics* (2)

Kirkpatrick

Spring—as arranged.

Prerequisite*: thirty semester hours of Home Economics.

150 *Teaching Business Subjects* (2)

Sherr

Spring—as arranged.

Prerequisite*: thirty semester hours of business education.

THIRD GROUP†

201-2 *Learning and Teaching* (3-3)

McCauley

Lecture (2 hours), conference (1 hour), field work (2 hours)—as arranged.

First half: fall—evening. Second half: spring—evening.

For graduate students. First half: nature of learning approached through the study of classroom situations. Second half: nature of teaching approached through observation of classroom situations.

203-4 *Comparative Education* (3-3)

Academic year—evening.

Comparison of foreign educational systems with those of the United States; particularly those of Russia, West Germany, Denmark, Switzerland, France, the British Isles, Canada, and Australia.

St. Cr.

205-6 *The Curriculum*‡ (3-3)

Academic year—evening.

For experienced teachers. First half: curriculum foundations and issues; comparison of curriculum patterns. Second half: principles and procedures in curriculum development; group consideration of student problems.

St. Cr.

207 *Curriculum Materials*‡ (3)

Summer 1959.

For experienced teachers. Construction of courses of study, resource units, classroom teaching aids, and inexpensive materials; direct application to students' own situations.

McCauley

209 *Child Growth and Development* (3)

Fall—Saturday morning.

An interdisciplinary approach to child development taking into account such factors as society and culture, socialization, and socializing agents with particular emphasis on the home and school.

* Prerequisite to all special methods courses: Education 109-10, 121-22, and 131. All prerequisites are stated under each course.

† A degree from an accredited institution is prerequisite to all third group courses.

‡ Prerequisite: adequate professional preparation.

- 210 *Adolescent Growth and Development* (3) McCauley
Spring—Saturday morning; summer 1959.
A consideration of physical, intellectual, and cultural backgrounds of adolescence with particular emphasis on social development, adjustment to organized society, educational development and adjustment to school, and home relationships.
- 211 *Evaluation in Education** (3) McCauley
Not offered 1959-60.
Concept of evaluation, relationship between evaluation of ends and means, steps involved in the evaluation of learning outcomes. As the course progresses each student develops solutions for evaluation problems related to his work situation.
- 212 *Educational Measurement* (3) McCauley
Summer 1959.
Basic measurement techniques; construction, selection, administration, and interpretation of objective and essay-type examinations; statistical analysis of test results; laboratory experiences in the use of test instruments.
- 213-14 *History of Education* (3-3) Jarman
Academic year—evening.
First half: the European backgrounds of American education. *Second half:* the evolution of the American school system.
- 215 *Education of Exceptional Children** (3) LaBue
Not offered 1959-60.
For classroom teachers. A survey of current problems in the education and guidance of exceptional pupils. Nature and needs of those physically, mentally, or emotionally handicapped; needs of the gifted. Resources for help in correction, diagnosis, therapy, education, and guidance.
- 216 *Education of Slow-learning Children** (3) LaBue
Spring—evening; summer 1959.
Identification, nature, and needs of slow-learning elementary and junior high school children. Emphasis on diagnosis and treatment of learning difficulties.
- 217-18 *Contemporary Problems in Education** (3-3) Jarman
Academic year—evening; summer 1959—Education 217 (3).
First half: designed to help students formulate a personal philosophy of education. *Second half:* social foundations of education—a study of the forces that shape the policies and offerings of the school.
- * Prerequisite: adequate professional preparation

219 *Elementary School Classroom Procedures** (3)

LaB

Summer 1959.

Current classroom practices with particular emphasis on work planning, unit teaching, techniques in discipline, individual and evaluation techniques, resources for learning, providing for individual differences.

221 *Early Childhood Education** (3)

Not offered 1959-60.

For experienced teachers. Emphasis on methods, materials, and learning experiences designed to meet the developmental needs of kindergarten and primary-grade children.

223-24 *Reading Problems** (3-3)

Cole

Academic year—evening.

For experienced teachers. Study of reading difficulties on elementary and secondary school levels; application of clinical procedures and techniques in solving classroom problems.

225 *Elementary School Reading* (3)

Cole

Summer 1959.

Developmental and remedial approaches to reading problems. Illustrations of diagnostic and corrective techniques used in the Reading Clinic.

227 *Basic Issues in Elementary Education* (3)

LaB

Fall—evening.

A consideration of basic issues in the purposes, organization, and conduct of elementary education. Emphasis on the philosophical and psychological roots of fundamental assumptions as they relate to classroom practices.

228 *Instructional Areas in Elementary Education* (3)

LaB

Spring—evening.

Critical appraisal of the objectives, organization, content, and teaching methods in the language arts, arithmetic, social studies, arts and crafts, health and physical education.

229 *Administration of Elementary Education* (3)

LaBue

Fall—evening; summer 1959.

For experienced teachers and administrators. Administration as a means of achieving instructional objectives, organizing teaching activities, handling supplies and equipment, maintaining

* Prerequisite: adequate professional preparation.

building, and integrating school and community life. Emphasis upon guide lines to action.

- 231 *Secondary School Classroom Procedures** (3) Giancaspro

Fall—evening; summer 1959.

Survey of current classroom practices with particular attention to selected topics such as teacher-pupil planning, group procedures, pupil security, initiatory and culminating activities, individual and group evaluation techniques, teaching aids, etc.; review of recent literature.

- 233 *Audio-visual Education** (3) J. Johnson

Spring: lecture (2 hours), laboratory (1 hour)—evening; summer 1959.

Role of audio-visual materials in learning; selection, evaluation, and use of materials; administrative problems in the care, operation, maintenance, and use of audio-visual materials and equipment. Material fee, \$7.

- 239 *Teaching the Core Curriculum** (3) St. Cyr

Not offered in 1959-60.

An examination and study of classroom teaching procedures appropriate to the core program.

- 241 *Education of the Gifted** (3)

Spring—evening; summer 1959.

For classroom teachers. Nature and discovery of giftedness; provisions for the gifted in regular classes; experimental projects.

- 243 *Human Relations in the Classroom** (3) Marinaccio

Summer 1959.

Principles and practices involved in interpersonal relationships between learner and teacher and among learners.

- 245 *School and Community** (3) Angel

Spring—evening.

The school as an important member of a team of social agencies that builds the community.

- 251 *Guidance in Secondary Schools** (3) Brougher

Fall—evening; summer 1959

Scope; needs; organization of the program; services to students, the instructional staff, and the administration; personnel needed for the program.

* Prerequisite: adequate professional preparation.

254 *The Junior High School** (3)

Not offered 1959-60.

Purposes, organization, core programs, guidance, developing course study, extra-classroom activities.

255-56 *Secondary Education** (3-3)

Academic year—evening; summer 1959.

First half: current proposals for the improvement of secondary education. Second half: current problems in each of the subject-matter fields.

259-60 *Secondary School Management** (3-3)

H. Johnson

Academic year—evening.

For experienced teachers and administrators with two years of successful teaching in secondary schools. Management planning, execution and control; criteria of good management; construction of the master schedule; leadership problems incident to the development of new policies and programs.

263-64 *Employee Training* (3-3)

Academic year—evening.

First half: nature and purpose, review of major programs—orientation, supervisory, apprentice, clerical, skills, communication. Second half: administrative problems and practices, training media, coordination with other management functions. Prerequisite: adequate professional preparation or two years of experience in employee training.

265-66 *Teaching Secondary School English* (3-3)

Academic year—evening.

A refresher course for teachers of English. Discussion of new approaches to high school content. Offered in cooperation with the departments of English and Speech. First half: communication and structural linguistics, composition, and speech. Second half: American and English literature.

267-68 *Teaching Secondary School Social Studies* (3-3)

Not offered 1959-60.

A refresher course for teachers of the Social Studies. Discussion of new approaches to high school content. Offered in cooperation with the departments of History, Political Science, Geography, Economics and Sociology and Anthropology.

* Prerequisite: adequate professional preparation.

270 *Art Education* (3)

Nowlin

Not offered 1959-60.

For experienced teachers. Basic philosophies of contemporary teachers of art; use of visual and tactile media; emphasis upon visual aids, displays, and use of community resources. Designed to increase awareness of the creative process. Prerequisite: Education 113. Material fee, \$4.50.

271 *The Teacher and School Administration** (3)

Fox

Fall—Saturday morning.

A survey course for teachers and prospective administrators. Education and world affairs, national agencies, role of the state, local administration, school finance, legal controls, school plant, public support, democratic administrative procedures, improving teaching conditions.

272 *The Teacher and School Supervision** (3)

Fox

Spring—Saturday morning; summer 1959.

Nature, organization, human relationships, and techniques.

273-74 *Teacher Education** (3-3)

LaBue

Academic year—Saturday morning.

First half: aims, objectives, and basic issues; study of outstanding and experimental programs. *Second half:* recruitment and selection, general education, teaching-field preparation, professional sequences, laboratory experiences.

275 *School Finance** (3)

Hutchins

Not offered 1959-60.

Educational financial theory, practice, and control, including methods of financing.

276 *Seminar: Public Relations in School Administration** (3)

Joy

Summer 1959.

Purposes, gathering materials, disseminating agencies, publicity media, public participation in policy making.

278 *School Law** (3)

Remmlein

Fall—evening.

Sources and scope of school law; legal rights and responsibilities of teachers, pupils, and taxpayers. Other legal problems of major interest to the group.

* Prerequisite: adequate professional preparation.

279-80 *Adult Education** (3-3)

Detwiler, Holden

Academic year—evening; summer 1959—Education 279 (3).

First half: current concepts and objectives, agencies involved in adult education, programs on all levels—international through community. *Second half:* the adult as a learner, the teacher of adults, learning-teaching methods, administration of adult education program.

281 *Group Procedures in Education** (3)

Detwiler

Summer 1959.

Theory, practice, evaluation, and application to all educational situations.

285 *Extra-classroom Activities** (3)

Sub

Summer 1959.

Nature and purposes of selected activities—homeroom, clubs, assemblies, school publications, student council, interscholastic contests; particular attention to sponsorship, participation, finance, and evaluation.

287-88 *Clinical Study of Reading Problems** (3-3)

Coleman

Academic year—Saturday morning.

For advanced students. Diagnostic and corrective work under supervision of the Reading Clinic. Each student is expected to observe and treat pupils who are retarded in reading. Case studies are presented and criticized. Prerequisite: Education 223-24 or the equivalent. Material fee, \$5 a semester.

289-90 *Supervisory Problems in Reading** (3-3)

Coleman

Not offered 1959-60.

For experienced teachers, principals, supervisors, and superintendents. Considers the problems involved in planning, reorganizing, improving the total reading program, in promoting cooperative action on the part of the staff toward increasing teaching efficiency.

291 *Planning the School Plant* (3)

H

Spring—evening.

Selection of sites; evaluation of existing buildings; utilization of present facilities; adaptation to curricular needs; building, operation, and maintenance problems.

293-94 *Research* (3-3)

The

Academic year—as arranged

Individual research under the guidance of a member of the faculty. Program and conferences arranged with an instructor.

* Prerequisite: adequate professional preparation.

295 *Educational Research Methods and Procedures* LaBue
(3)

Fall—late afternoon; spring—late afternoon; summer 1959.

Required of all Master of Arts candidates following Plan 2. Knowledge of elementary statistics required.

297 *Reading in Education* The Staff

Fall—late afternoon; spring—late afternoon; summer 1959.

To assist those preparing for the comprehensive examinations. No credit toward degree requirements. Tuition fee, \$22.

299-300 *Thesis (3-3)* The Staff

Academic year—as arranged.

Required of all Master of Arts candidates following Plan 1.

ELECTRICAL ENGINEERING

- Norman Bruce Ames, LL.B., E.E., M.S. in E.E., Dr. sc. techn., *Professor of Electrical Engineering*
- Ernest Frank, B.E.E., M.S. in E.E., Ph.D., *Professor of Electrical Engineering, Executive Officer*
- Forest Klaire Harris, Ph.D., *Professorial Lecturer in Electrical Engineering*
- Louis Depian, Ph.D., *Associate Professor of Electrical Engineering*
- Nelson Thomas Grisamore, Ph.D., *Associate Professor of Electrical Engineering*
- Alexander Walter Sumoski, Ph.D., *Associate Professorial Lecturer in Electrical Engineering*
- Robert Steven Ledley, D.D.S., A.M., *Assistant Professor of Electrical Engineering*
- Llewellyn Adam Rubin, M.S. in E.E., *Assistant Professor of Electrical Engineering*
- Dwight Edward Shytle, *Lecturer in Electrical Engineering*
- Kermit Milton Lovewell, B.S. in E.E., *Lecturer in Electrical Engineering*
- George Abraham, M.S., *Lecturer in Electrical Engineering*
- William Walter Balwanz, B.E.E., M.S. in E.E., *Lecturer in Electrical Engineering*
- George Pida, B.E.E., *Lecturer in Electrical Engineering*
- William Alderson, M.S. in E.E., *Lecturer in Electrical Engineering*
- Peter Hans Sawitz, M.S. in E.E., *Lecturer in Electrical Engineering*
- Louis Samuel Rotolo, B.S. in E.E., *Lecturer in Electrical Engineering*
- Clifford Duras Ferris, M.S. in E.E., *Instructor in Electrical Engineering*
- Derrill Conway Rohlf, B.E.E., *Associate in Electrical Engineering*
- William Reuthoven Smith III, B.S., B.E.E., *Associate in Electrical Engineering*

Bachelor of Electrical Engineering (School of Engineering).—See pages 148 and 148-49 for statement of requirements.

Master of Science in Engineering (School of Engineering).—See pages 148 and 148-49 for statement of requirements.

FIRST GROUP

11 Electric Circuits (3)

Fall—morning and evening; spring—morning and evening.

Current, voltage, power, Kirchhoff's laws, steady-state mesh and nodal analysis, simple transients, matrices and determinants, network theorems, resonance, balanced polyphase circuits. Prerequisite: Mathematics 30. Prerequisite or concurrent registration: Physics 15.

- 12 *Electric Machinery* (3) Ames and Staff
Spring—morning and evening.

Analysis of d-c and a-c rotating machines in steady state, theory of idealized transformers. Emphasis is placed on electromechanical energy conversion. Prerequisite: Electrical Engineering 11.

SECOND GROUP

- 102 *Engineering Electronics* (3) Depian and Staff
Spring—morning and evening.

Introductory treatment of: physical concepts of electron-tube and semi-conductor devices, their electrical characteristics, and their use in electronic circuit applications. Linear and nonlinear methods of analysis. Prerequisite: Electrical Engineering 11, Mathematics 112.

- 103 *Electric and Magnetic Fields* (3) Grisamore and Staff
Fall—morning and evening.

Introduction to vector analysis; basic concepts of electrostatics and magnetism. Analysis of resistance, capacitance, inductance, forces, magnetic circuits. Prerequisite: Electrical Engineering 11, Mathematics 112.

- 104 *Field Analysis* (3) Depian and Staff
Spring—morning and evening.

Solid angle, method of images, vector potential, magnetic scalar potential, conformal mapping, solutions of Laplace's equation, field plotting, analogues. Particle motion in electric and magnetic fields. Introduction to Maxwell's equations. Prerequisite: Electrical Engineering 103, Mathematics 112.

- 107 *Steady-state Network Analysis* (3) Ferris and Staff
Fall—morning and evening.

Four-terminal networks, network theorems, poles and zeros of network functions, resonance, filters, coupled circuits, transmission lines, Fourier series, matrices. Prerequisite: Electrical Engineering 11, Mathematics 112.

- 111 *Electrical Measurements* (2) Rubin and Staff
Fall—morning and evening.

Systems of units, theory of errors, d-c indicating instruments and galvanometer dynamics, precision measurement of voltage, current, and resistance. Prerequisite: Electrical Engineering 11, Mathematics 112.

- 112 *Electrical Measurements* (2) The Staff
Spring—morning and evening.

Theory of a-c indicating instruments, a-c bridges, waveforms, frequency measurements, measurement of power and energy. Prerequisite: Electrical Engineering 107, 111.

113-14 *Electric Power Laboratory (2-2)*

Ames and St

Fall—afternoon and evening; spring—afternoon and evening.

Experiments in d-c and a-c circuits, instruments, and machines. Prerequisite to Electrical Engineering 113; Electrical Engineering 112. Prerequisite to Electrical Engineering 114. Electrical Engineering Laboratory fee, \$11 a semester.

118 *Electrical Energy Conversion (3)*

Ames, R

Spring—morning and evening.

Analysis of physical systems involving electrical, mechanical, and thermal energy conversion; mathematical formulations using the Lagrange equation; transient and steady state analysis of special machines including the generalized rotating energy converter. Prerequisite: Electrical Engineering 112, Mathematics 112. Prerequisite or concurrent registration: Electrical Engineering 114, 115.

122 *Measurements and Electronics Laboratory (2)*

R

Spring—afternoon and evening.

Experiments with d-c measuring instruments, oscilloscopes, and impedance bridges; network theorems and resonance; characteristics of electronic devices and simple amplifiers. Prerequisite: Electrical Engineering 111. Prerequisite or concurrent registration: Electrical Engineering 102, 112. Laboratory fee, \$11.

123 *Electronic Devices and Systems Laboratory (2)*

Rubin and S

Fall—afternoon and evening

Theory and use of electronic devices and instruments. Experiments in active networks, tubes and transistors, nonlinear elements, waveform analysis, transfer characteristics. Prerequisite: Electrical Engineering 112, 122. Prerequisite or concurrent registration: Electrical Engineering 137. Laboratory fee, \$11.

124 *High-frequency Communications Laboratory (2)*

The S

Spring—afternoon and evening.

Experiments at radio- and microwave-frequencies: impedance, filters, transmitters, lines, waveguides, slotted lines, antennas, power, oscillators. Prerequisite: Electrical Engineering 123, 124. Prerequisite or concurrent registration: Electrical Engineering 136. Laboratory fee, \$11.

127 *General Network Analysis (3)*

Fall—morning and evening.

Solutions of linear integro-differential equations using transform calculus. Laplace transforms, Fourier integral, poles and zeros, work functions, correlation of time and frequency domains, one-

nal- and two-terminal-pair networks. Prerequisite: Electrical Engineering 107, Mathematics 112.

133 Engineering Analysis (3)

Depian

Fall—morning.

Application of fundamental principles of engineering, physics, and mathematics to problems in various fields of engineering. Emphasis is placed on problem solving using concepts previously studied. Prerequisite: Mathematics 112; Civil Engineering 121; Electrical Engineering 102, 118; Physics 16.

136 Electromagnetic Waves (3)

Frank and Staff

Spring—morning and evening.

Electromagnetic waves in bounded media, radiation from antennas, high-frequency transmission lines, cavity resonators and microwave devices. Prerequisite: Electrical Engineering 104, Mathematics 112.

137 Electronic Circuits and Systems (3)

Depian and Staff

Fall—morning and evening.

Analysis of linear amplifiers, concepts of feedback and oscillators, amplitude and frequency modulation and detection, communication systems. Prerequisite: Electrical Engineering 102 or Physics 132, Electrical Engineering 107, Mathematics 112.

171 Digital Circuitry and Systems (3)

Ledley, Grisamore

Fall—late afternoon.

Introduction to basic concepts of modern digital programmed systems, mathematical foundations and techniques for logical design of digital circuits, electronic design of computer circuits. Prerequisite: Mathematics 112, Electrical Engineering 102 or Physics 132.

172 Digital Techniques (3)

Ledley

Spring—late afternoon.

Continuation of Electrical Engineering 171. Automatic programming techniques, information theory, self-detecting and correcting codes, advanced logical circuit design, electronic design of digital transistor and magnetic-core circuits, memory systems, analog-to-digital techniques, wiring diagrams. Prerequisite: Electrical Engineering 171.

174 Digital and Analog Computer Laboratory (2)

Spring—afternoon.

Theory and use of digital and analog computers: programming, operating, logical circuitry, design, troubleshooting. Prerequisite: Electrical Engineering 137, 171. Laboratory fee, \$11.

189-90 *Proseminar in Electrical Engineering*
(1-1)

Frank and Staff

Academic year—late afternoon.

Oral and written presentation of technical and nontechnical papers by students, with group discussion and critical analysis. Prerequisite: senior status.

THIRD GROUP

205 *Electronic Circuit Analysis* (3)

Sawitz

Spring—evening.

Methods of linear and nonlinear analysis applied to passive and active networks including vacuum-tube and transistor circuits, and magnetic and dielectric amplifiers.

207 *Steady-state Network Analysis* (3)

Sumofsky

Spring—evening.

Analysis of lumped, linear networks: determinants, loop and mesh analysis, network theorems, four-terminal networks, filters, complex frequency, network functions, and general network properties.

209 *Electromagnetic Field Analysis* (3)

Frank

Fall—evening.

Electrostatics, magnetics, and Maxwell's equations: solutions of Laplace's equation, retarded potentials, electromagnetic waves in homogeneous media, field analysis techniques.

211 *Physical Electronics* (3)

Abraham

Fall—evening.

Physical principles underlying operation of various electronic devices including vacuum tubes, electron lenses, transistors, and recent developments in state electronic devices.

215 *Analysis of Modulation and Noise* (3)

Alderson

Spring—evening.

Analysis by Fourier series and integrals of signals and linear network modulation and spectra, noise analysis including probability methods of determining power spectra.

231 *Basic Concepts of Digital Computers* (3)

Spring—evening.

The programmed system, logical and system design of digital computers, special-purpose digital computers, theory of switching circuits and computer logic, reliability, digital electronic circuits, modern developments.

ENGLISH

Robert Whitney Bolwell, Ph.D., Litt.D., *Professor Emeritus of American Literature in Residence*

Ernest Sewall Shepard, A.M., *Professor of English Literature*
 Fred Salisbury Tupper, Ph.D., *Professor of English Literature*
 Calvin Darlington Linton, Ph.D., *Professor of English Literature*
 Charles William Cole, Ph.D., *Professor of American Literature. Executive Officer*

Robert Hamilton Moore, Ph.D., *Professor of English Composition*
 James Harold Coberly, Ph.D., *Professor of American Literature*
 William Lewis Turner, Ph.D., *Associate Professor of English*
 Muriel Hope McClanahan, Ph.D., *Associate Professor of English Com-*
position

Philip Henry Highfill, Jr., Ph.D., *Associate Professor of English Literature*

John Gage Allee, Jr., Ph.D., *Associate Professor of English Philology*
 John Palmer Reesing, Jr., Ph.D., *Associate Professor of English Literature*

Robert Harris Walker, Jr., Ph.D., *Associate Professor of American Literature*

Robert Elemer Gajdusek, A.M., *Assistant Professor of English*
 Elizabeth Truman Wright, A.M., *Assistant Professor of English Com-*
position

Nancy Marie Tischler, Ph.D., *Assistant Professor of English*
 Gennaro Anthony Santangelo, A.M., *Assistant Professor of English*

Paul Harold Stacy, A.M., *Assistant Professor of English*
 Paul Curry Steele, A.B., M.F.A., *Assistant Professor of English Com-*
position

James Gerard Sweeney, A.M., *Assistant Professor of English*

Bachelor of Arts with a major in American Thought and Civilization (Columbian College—Field-of-Study) —Prerequisite: the Arts and Letters curriculum in the Junior College, see page 70.

Required: the general requirements of Columbian College as stated on pages 37-91 and the grade "pass" on the American Thought and Civilization major examination at the end of the senior year. The coordinated field of knowledge upon which the student will be examined is summarized under four general headings: (1) European cultural history—the Renaissance and modern social and intellectual cultures as a background to contemporary civilization with particular attention to English literature and history from the 16th through the 19th centuries; (2) American history—the political, economic, social, and

religious thought and experience of the American people; (3) American philosophy and fine arts—a survey of periods and movements with a knowledge of outstanding individuals; (4) American literature—a knowledge of major writers, together with a study of poetry, fiction, and drama. The Department of English provides a proseminar (English 179-80) intended to assist the student in preparing himself for the major examination. The major adviser will give to each student at registration a check list of available courses grouped as prerequisite, necessary, or desirable for the completion of the major study program. *Bachelor of Arts with a major in English Literature (Columbian College Field-of-Study).*—Prerequisite: the Arts and Letters curriculum in the Junior College described on page 70. It is recommended that prospective majors elect English 91-92 from among the listed offerings.

Required: the general requirements of Columbian College as stated on pages 85-91, and the passing of the English Literature major examination at the end of the senior year. The field of coordinated knowledge upon which the student will be examined at the end of his senior year is summarized under the following general headings: (1) the history of English literature from the Anglo-Saxon period; (2) the chief English writers (a certain familiarity with each man and his main works and a detailed knowledge of Shakespeare); (3) English social and political history as it bears upon or is reflected in the literature; (4) European intellectual backgrounds and movements which have affected English literature. The proportion of work taken in each of these areas should be worked out by the student in consultation with one of the English Literature advisers. The Department of English provides a proseminar (English 179-200) to assist the student in preparing himself for the major examination. A detailed description of the major is available in the Office of the Dean of Columbian College (*Master of Arts in the field of American Literary and Cultural History*, Columbian College).—Prerequisite: the equivalent of an undergraduate major at this University in (1) History (with American history as a major part), or American Thought and Civilization, or (2) English Literature (with its senior courses in American literature and American history). The student who has not taken any of the above majors at this University must take a candidacy examination.

Required: in addition to the general requirements of Columbian College as stated on pages 91-95, the following specific requirements must be met: twelve of the required semester hours must be of seminar study, six in American history and six in American literature; twelve of the required semester hours must be of second and third group courses in the fields of American literature, philosophy, education, and art recommended by the adviser; and (six semester hours) in any of the foregoing fields or in some combination of them. Because of the various undergraduate majors which will be accepted for admission to this program, a basic reading list is assigned to all students to assist in preparing them for the final Master's examination.

Master of Arts in the field of English and American Literature (Columbian College).—Prerequisite: an undergraduate major, in English Literature or American Thought and Civilization at this University; or twenty-four semester hours in English and/or American literature above the sophomore level. A student who has not taken either of the above majors at this University must take a candidacy examination. The student offering split preparation in English and American literature will be examined in English and American literature as stated on pages 91-95, the following specific requirements must be met: (1) a schedule of courses amounting to twenty-four semester hours, prepared in consultation with the adviser, on the basis of the student's undergraduate preparation, to include a comprehensive survey of American literature and

English literature from 1600; (2) a Master's thesis (six semester hours) written upon an approved topic under the direction of the instructor in whose field the major portion of the material falls; (3) a final written examination, on American literature and on English literature from 1600.

Master of Arts in the field of English Literature (Columbia College).—Prerequisite: an undergraduate major in English Literature at this University, or twenty-four semester hours in English literature above the sophomore level. The student who has not passed the major examination in English at this University must take a candidacy examination which, in its scope and difficulty, is comparable to the major examination in English.

Required: in addition to the general requirements of Columbia College as stated on pages 91-95, the following specific requirements must be met: (1) a schedule of courses amounting to twenty-four semester hours, planned in consultation with the adviser; (2) a Master's thesis (six semester hours) written upon an approved topic under the direction of the instructor in whose field the material falls; and (3) a final written examination.

Doctor of Philosophy (Graduate Council).—See page 103.
Bachelor of Arts in Education with a teaching field in English (School of Education).—Prerequisite: the Education curriculum, pages 72-73.

Required: the English option, page 173; and the professional courses listed on page 178.

ENGLISH COMPOSITION

FIRST GROUP

A *English Practice* (3)

The Staff

Fall—morning and evening; spring—morning and evening; summer 1959.

Instruction, drill, and exercises in grammar, vocabulary, spelling, and mechanics in general; instruction and exercises in composition and reading. This course is designed to prepare students for English 1.

B *English for Foreign Students* (3)

Allee

Fall—morning and evening; spring—morning and evening; summer 1959.

A course in reading and writing designed to prepare the student for English 1. Special attention is given to spelling, syntax, grammar, idiom, and vocabulary.

C *English Composition** (3)

Moore and Staff

Fall—morning and evening; spring—morning and evening; summer 1959.

Review of grammar, exercises in composition, readings.

* Before students are registered in English 1, they are tested in the minimum essentials of vocabulary, spelling, grammar, standard usage, and writing skill. Those students who show marked superiority may, upon passing further tests, be exempted from one or both halves of the English Composition course; those who are inadequately prepared for English 1 will be assigned to English A.

All pre-Columbia College students (who are required to take one year of English composition and one year of literature in English, Classical languages, French, German, or Spanish) will follow the sequence of English 1, both semesters of one of the introductory literature courses, and English 1.

English 1 is prerequisite to all other courses in English. English 2 is the second half of the six-hour composition course requirement of students not required to follow the pre-Columbia College sequence.

2 English Composition* (3)

Moore and Staff

Fall—morning and evening; spring—morning and evening; summer 1959.

For second-semester freshmen not following the pre-Columbian College curricula. Readings and practice in expository and argumentative techniques and in research procedure. Prerequisite: English 1.

4 English Composition* (3)

Moore and Staff

Fall—morning and evening; spring—morning and evening; summer 1959.

The second half of the six-hour English Composition course required of students in the pre-Columbian College curricula. A course in composition analysis and practice in expository and argumentative techniques and in research procedure. Prerequisite: English 1 and both semesters of one of the introductory literature courses.

11 The Writing of Reports (3)

Turner and Staff

Fall—morning and evening; spring—morning and evening; summer 1959.

Theory and practice in the writing of technical reports. Prerequisite: English 1, and 2 or 4.

SECOND GROUP

109 Expository Writing (3)

McClanahan and Staff

Fall—evening.

A study of types of expository writing with weekly exercises. Prerequisite: English 1, and 2 or 4.

113 Narrative Writing (3)

Fall—evening.

Study of the techniques of narrative writing and class criticism of student writing. Prerequisite: English 1, and 2 or 4.

114 The Writing of Fiction—the Short Story (3)

Spring—evening.

Prerequisite: English 113; consent of instructor.

116 Advanced Exposition (3)

Not offered 1959-60.

Theory and practice in the writing of expository articles and essays. Prerequisite: English 109; consent of instructor.

* See footnote on page 121.

- 117-18 *The Writing of Fiction—the Novel* (3-3) Steele

Academic year—evening.

Writing a novel. Prerequisite: English 114; consent of instructor.

ENGLISH LITERATURE

FIRST GROUP

- 51-52 *Introduction to English Literature** (3-3) Tupper and Staff

Academic year—morning, afternoon, and evening; summer 1959.

A historical survey. Prerequisite: English 1.

- 91-92 *Introduction to European Literature** (3-3) Shepard and Staff

Academic year—morning and evening.

Consideration of various types. Prerequisite: English 1.

SECOND GROUP*

- 121-22 *English Literature from the Beginnings to 1500* (3-3) Allee

First half: not offered 1959-60. Second half: spring—evening.

First half: English literature prior to Chaucer. Second half: Chaucer.

- 125 *Introduction to English Linguistics* (3) Allee

Fall—Evening.

The development of the English language in a historical treatment of English grammar.

- 129-30 *Elizabethan Nondramatic Literature* (3-3) Tupper

Not offered 1959-60.

Nondramatic literature from 1485 to 1601.

- 135-36 *Shakespeare* (3-3) Tupper

Academic year—evening; summer 1959—English 136 (3).

- 139-40 *The Seventeenth Century* (3-3) Linton, Reesing

Academic year—morning; summer 1959—English 139 (3).

First half: poetry and prose from 1603 to 1660. Second half: Milton.

* All pre-Columbian College students who are required to take one year of English composition and one year of literature in English, Classical Languages, French, German, or Spanish will follow the sequence of English 1, both semesters of one of the introductory literature courses, and English 4.

English 51-52, 71-72, 91-92, Classical Languages and Literatures 71-72, French 51-52, German 51-52, or Spanish 51-52 is prerequisite to all second-group courses except English 125.

- 141-42 *The Neoclassical Movement* (3-3) Highfill
Not offered 1959-60.
Poetry and prose from 1660 through the mid-18th century.
- 151-52 *The Romantic Movement* (3-3) Reesing
Academic year—morning; summer 1959—English 152 (3).
From the mid-18th century through Shelley and Keats.
- 161-62 *Victorian Literature* (3-3) Shepard
Academic year—morning.
Poetry and prose from 1830 to 1900.
- 165-66 *The Twentieth Century* (3-3) Linton
Academic year—morning; summer 1959—English 166 (1).
British poetry, prose, and drama since 1900.
- 181-82 *The English Novel* (3-3) Reesing
Academic year—evening.
Major English novelists from the 18th century to the present day.
- 183-84 *The English Drama* (3-3) Highfill
Academic year—morning.
First half: concerned principally with the drama of Shakespeare's contemporaries. *Second half:* a historical survey from 1660 to the present day.
- 192 *Medieval Legend and Saga* (3) Allen
Not offered 1959-60.
Celtic and Norse.
- 199-200 *Proseminar: Readings for the English Literature Major* (3-3) Tupper, Highfill
Academic year—afternoon and evening.
Conferences and group discussions.

THIRD GROUP

- 222 *The Age of Chaucer* (3)
Not offered 1959-60.

- 223-24 *Old English* (3-3) Allee
Not offered 1959-60.
English language and literature before 1100. *First half*: Old English grammar and readings. *Second half*: Beowulf.
- 225 *Applied Linguistics* (3) Allee
Summer 1959.
Survey of the English language since 1850; introduction to analytical methods of structural linguistics and their application to modern American and British writing and to secondary school teaching of English.
- 235-36 *Studies in Shakespeare and His Contemporaries* (3-3) Tupper
Academic year—evening.
Prerequisite: English 135-36.
- 239-40 *Studies in Seventeenth Century Literature* (3-3) Reesing
Not offered 1959-60.
Open to qualified undergraduates. *First half*: chief figures exclusive of Milton. *Second half*: Milton.
- 241-42 *Studies in Neoclassical Literature* (3-3) Highfill
Academic year—evening.
Prerequisite: English 141-42.
- 251-52 *Studies in the Romantic Movement* (3-3) Reesing
Not offered 1959-60.
Prerequisite: English 151-52.
- 261-62 *Studies in Victorian Literature* (3-3) Shepard
Not offered 1959-60.
Prerequisite: English 161-62.
- 265-66 *Studies in Twentieth Century Literature* (3-3) Linton
Not offered 1959-60.
Eliot and his contemporaries.
- 295-96 *Studies in the History of English Literary Criticism* (3-3) Shepard
Not offered 1959-60.
Open to undergraduates with the approval of the instructor.

299-300 Thesis (3-3)

The State

AMERICAN LITERATURE

FIRST GROUP

71-72 *Introduction to American Literature**
(3-3)

Cole and State

Academic year—morning and evening; summer 1959.

SECOND GROUP*

170 *The American Short Story* (3)

Coberly

Summer 1959.

The historical development of the short story in America.

171-72 *Studies in American Literature* (3-3)

Cole

1959-60 and alternate years: academic year—morning; 1960-61 and alternate years: academic year—evening.

Major factors in the national cultural tradition as shown by outstanding writers. Prerequisite: English 51-52 or 71-72

Coberly

173-74 *Major American Poets* (3-3)

Academic year—evening.

Advanced critical study of significant writers and movements. First half: from beginnings through 19th century. Second half: the 20th century.

Bolwe

175-76 *American Drama* (3-3)

1959-60 and alternate years: academic year—evening; 1960-61 and alternate years: academic year—morning; summer 1959—English 176 (3).

Historical and critical study of significant plays and forms. First half: from beginnings through 19th century. Second half: the 20th century.

A historical survey. First half: from the beginnings to the Civil War. Second half: from the Civil War to the present. Prerequisite: English 175

Coberly

177-78 *American Fiction* (3-3)

1959-60 and alternate years: academic year—morning; 1960-61 and alternate years: academic year—evening.

* All pre-Columbian College students (who are required to take one year of foreign language and one year of literature in English, Classical Languages, French, German, or Spanish) follow the sequence of English 1, both semesters of one of the introductory literature courses in English 4.

English 51-52, 71-72, 91-92, Classical Languages and Literatures 51-52, French 1-2, German 1-2, or Spanish 51-52, or Spanish 51-52 is prerequisite to all second-group courses except English 175-76.

Historical and critical study of significant novels and short stories. *First half:* from beginnings through 19th century. *Second half:* the 20th century

- 179-80 *Proseminar: Readings for American Thought and Civilization Majors* (3-3) The Staff

Academic year—evening.

Conferences and group discussions.

THIRD GROUP

- 271-72 *Seminar: American Literature* (3-3) Coberly

Academic year—as arranged.

Prerequisite: English 171-72 or the equivalent.

- 277-78 *Studies in American Fiction* (3-3) Coberly

Academic year—evening.

Prerequisite: English 177-78 or the equivalent. Open to the undergraduate with the approval of the instructor.

- 279-80 *Thesis* (3-3) The Staff

RELATED COURSES IN OTHER DEPARTMENTS

Education 136, *Teaching English*

History 151-52, *English History*

Philosophy 111-12, *History of Philosophy*

GEOGRAPHY

Robert Dale Campbell, Ph.D., *Professor of Geography, Executive Officer*
 Harland Walter Westermann, A.M., *Associate Professor of Geography*
 Richard Ernest Murphy, Ph.D., *Associate Professor of Geography*

Bachelor of Arts with a major in Geography (Columbia College—Departmental).—Prerequisite: the Arts and Letters curriculum in the Junior College (see page 70). It is strongly recommended that this curriculum include: Botany 1-2; Economics 1, 2; Geography 1-2; and Sociology and Anthropology 1-2. Electives must include Geography 51 and 52.

Required: in addition to the general requirements of Columbia College as stated on pages 85-91, twenty-four semester hours of Geography beyond and group courses, including Geography 103-4, 115-16; fifteen semester hours of one or more of the following departments: Botany, Economics, Geology, History, Political Science, Sociology and Anthropology; and six semester hours of Mathematics or Statistics.

Master of Arts in the field of Geography (Columbia College).—Prerequisite: the degree of Bachelor of Arts with a major in Geography from this University or the equivalent.

Required: the general requirements of Columbia College as stated on pages 91-95. The thirty hours of required work must include Geography 201-2, 231 and 299-300.

Bachelor of Science in Cartography (College of General Studies).—See pages 332-33, "Courses Offered in Special Programs," and the College of General Studies Catalogue for complete details.

Bachelor of Arts in Education with a teaching field in Geography (School of Education).—Prerequisite: the Education curriculum, pages 72-73.

Required: the Geography option, page 174 and the professional courses listed on page 178.

Doctor of Philosophy (Graduate Council).—See page 103.

FIRST GROUP

51 *Introduction to Geography* (3)

Fall—morning; spring—evening; summer 1959.

A study of place attributes and characteristics, patterns and associations of physical and cultural earth features.

52 *World Regions* (3)

Fall—evening; spring—morning; summer 1959.

The analysis of world regional divisions, description and interpretation of region complexes, evaluation of regional differences as they affect the distribution and activities of man.

SECOND GROUP

103-4 *Cartography (3-3)* Westermann

A year course: credit is not given for the first half until the second half is completed.

Academic year—Saturday morning.

Principles of cartographic drafting: elementary map projections; map and graph planning, design and construction; uses and interpretation of maps. Prerequisite: Geography 51 and 52. Laboratory fee, \$11 a semester.

115-16 *Physical Geography (3-3)* Murphy

A year course: credit is not given for the first half until the second half is completed.

Academic year: lecture (2 hours), laboratory and field trip (2 hours)—evening and Saturday afternoon.

Introduction to the earth sciences: form of the earth, erids and time, weather and climate, geomorphic processes and landforms, soils, vegetation.

125 *Transportation Complexes (3)* Campbell

Fall—evening.

A study of the areal structures and functions of the transportation networks and systems by which people, things, and ideas are given varying degrees of place utility.

126 *World Food Production (3)* Campbell

Spring—evening.

World distribution of patterns of consumption and production of food stuffs, commercial and subsistence agriculture, primary and secondary production, caloric intake.

133 *Regional Industrial Structures (3)*

1960-61 and alternate years.

The nature of the industrial complex, types and distribution of industry, principles of industrial and economic development planning.

134 *Location of Industry (3)*

1960-61 and alternate years.

Structure and development of the major world industries, industrial location requirements, principles of industrial equilibrium.

141-42 *Urban Settlement (3-3)* Westermann

A year course: credit is not given for the first half until the second half is completed.

Academic year—evening.

Location, functions, and forms of cities, urban-rural relationships; the urban hierarchy; bases for urban planning.

145 *World Cultural Geography* (3)

Murphy

Fall—morning.

The location and distribution of man and his culture, with primary emphasis on demographic factors, race, language, religion, social structures, and group characteristics.

146 *World Political Geography* (3)

Murphy

Spring—morning.

Types and distributions of political systems, the major political units and associations of the world, factors which affect relative political power, areas of conflict and arbitration.

183 *Western Europe** (3)

Campbell

Not offered 1959-60.

184 *The Mediterranean** (3)

Campbell

Not offered 1959-60.

185 *Africa** (3)

Murphy

Fall—evening.

186 *The Middle East** (3)

Campbell

Not offered 1959-60.

191 *Latin America** (3)

Murphy

Spring—evening.

195 *Eastern and Southeastern Asia** (3)

Not offered 1959-60.

196 *The Soviet Union** (3)

Not offered 1959-60.

197 *The Pacific** (3)

Not offered 1959-60.

198 *Australia** (3)

Westerman

Not offered 1959-60.

* Regional survey. No prerequisites. For students particularly interested in the study of specific regions, regional courses in the departments of Economics, History, and Political Science are strongly recommended, for example: Economics 185-86, *Economic History and Problems of Latin America*; History 164, *South America since Independence*; and Political Science 177, *Recent Trends in Latin American Politics and Government*.

THIRD GROUP*

201-2 *Seminar: History and Philosophy of Geography* (3-3) Murphy

A year course: credit is not given for the first half until the second half is completed.

Academic year—evening.

A study of the development of geographic thought, from Herodotus to the present; a critical appraisal of the great works of the world's most famous geographers; an attempt to develop a useful, contemporary philosophy of geography.

205-6 *Area Data Collection and Analysis* (3-3) Westermann

A year course: credit is not given for the first half until the second half is completed.

Academic year: lecture (1 hour), laboratory and field (3 hours)—evening.

Sources of regional information; methods and systems of data collection; quantitative and qualitative methods of analysis; systems of synthesis.

211-12 *Reading Course in Economic Geography* (3-3)

A year course: credit is not given for the first half until the second half is completed.

Not offered 1959-60.

The development of economic geography as a systematic approach to regional analysis, the literature of economic geography, research methods.

233-34 *Seminar: Regional and Urban Planning* (3-3) Campbell

A year course: credit is not given for the first half until the second half is completed.

Academic year—evening.

Analysis of the planning function, major problems confronting the planner, contemporary status of planning—its areas of success and failure.

241-42 *Seminar: Place and Culture* (3-3)

Not offered 1959-60; summer 1959—Geography 241 (3).

A study of the culture traits which characterize various ethnic groups and differentiate people-place associations.

* Senior major or graduate status is required in all third group courses.

251-52 *Seminar: World Problem Areas* (3-3)

Not offered 1959-60.

A study of those parts of the world which have become matters of international concern, whether because of their political or social instability, unsound economic development, or aggressive tendencies. An evaluation of the complex of factors which have created the "problems".

The Staff

295-96 *Research* (3-3)

Academic year—as arranged.

Special directed studies.

The Staff

299-300 *Thesis* (3-3)

COURSES OFFERED IN SPECIAL PROGRAMS

In addition to the regular courses announced above, the University offers the following courses for students enrolled in the Engineering Administration program and for students undertaking work toward the degree of Bachelor of Science in Cartography, which is administered by the College of General Studies. For information concerning the degree in Cartography, see the separate catalogue of the College of General Studies.

ENGINEERING ADMINISTRATION PROGRAM

271 *Engineering Geography* (3)

CARTOGRAPHY PROGRAM

Geography

113 *Geomorphology* (3)114 *Weather and Climate* (3)132 *Land Use* (3)171 *Field Geography* (3)

Transportation fee, \$18.

176 *Photo Geography* (3)

Cartography

1 *Map Interpretation* (3)2 *Air Photo Interpretation* (3)100 *Map Drafting and Design* (3)

- 110 *Map Projections* (2)
- 111 *Map Reproductions* (1)
- 175 *Map Compilations* (3)
- 191-92 *Map and Chart Construction* (3-3)
- 195 *Cartographic Problems* (3)

GEOLOGY

Geza Teleki, Ph.D., *Professor of Geology, Executive Officer*
 Charles Louis Christ, Ph.D., *Professorial Lecturer in Geology*
 Michael Fleischer, Ph.D., *Professorial Lecturer in Geology*
 Howard Tasker Evans, Jr., Ph.D., *Professorial Lecturer in Geology*
 Ira Gregory Sohn, A.M., *Associate Professorial Lecturer on Paleontology*
 Irving Friedman, Ph.D., *Lecturer in Geology*

Bachelor of Arts or Bachelor of Science with major in Geology (Columbia College—Departmental).—Prerequisite: the Arts and Letters or the Science curriculum, respectively, in the Junior College, pages 70 and 71. The first-group courses must be included: Geology 1-2, 12, 51; Chemistry 11; Physics 11-12; Biology 1-2 or Botany 1-2 or Zoology 1-4.

Required: in addition to the general requirements of Columbia College stated on pages 85-91, twenty-four semester hours in Geology beyond the first-group courses for the Bachelor of Arts degree, thirty for the Bachelor of Science degree.

Master of Arts or Master of Science in the field of Geology (Columbia College).—Prerequisite: the degree of Bachelor of Arts or Bachelor of Science, respectively, with a major in Geology from this University, or the equivalent.

Required: the general requirements of Columbia College as stated on pages 91-95.

Note: The Department of Geology has recently been reactivated after a lapse of several years. It is planned, therefore, that as the program develops courses in addition to those listed below will be offered, including vertebrate paleontology, paleobotany, field geology, pedology, advanced general geology, and advanced work in sedimentary petrography.

FIRST GROUP

1-2 *Introductory Geology (3-3)*

Academic year: lecture (2 hours), laboratory and field trip (3 hours)—morning and afternoon.

A survey course covering the principles of geology. First half: physical geology—materials of the earth's crust, geologic processes. Second half: historical geology, geological periods, evolution of life on earth. Laboratory fee, \$5 a semester.

12 *Minerals and Rocks (3)*

Fall: lecture (2 hours), laboratory (3 hours)—morning.

Analysis, identification, and classification of minerals and rocks. Descriptive and determinative mineralogy. Prerequisite: Geology 1-2 or permission of the instructor. Laboratory fee, \$7.

51 *Introductory Paleontology and Stratigraphy* (3) Teleki

Spring: lecture (2 hours), laboratory (2 hours)—morning.

A survey course in paleontology: taxonomy of fossils; and stratigraphy.
Prerequisite: Geology 1-2 or permission of the instructor. Laboratory fee, \$5.

SECOND GROUP

101 *History of Geological Sciences* (1) Teleki

Fall—afternoon.

Lectures on the development of geological thought and the history of geological and related sciences.

111-12 *Mineralogy* (3-3)

A year course: credit is not given for the first half until the second half is completed.

Academic year: lecture (2 hours), laboratory (3 hours)—afternoon and evening.

Crystallography and optical mineralogy. Study of minerals with the polarization microscope. Prerequisite: Geology 1-2, Chemistry 11-12, Physics 11 and 12. Laboratory fee, \$10 a semester.

115 *Petrography* (4)

Fall: lecture (2 hours), laboratory (4 hours)—evening

Description, classification, and identification of igneous, sedimentary, and metamorphic rocks. Study of rocks with the polarization microscope. Prerequisite: Geology 111-12. Laboratory fee, \$15.

122 *Structural Geology* (3)

Teleki

Fall: lecture (2 hours), laboratory and field trips as arranged—morning.

Interpretation of geologic formations on the basis of their structures and genesis. Principles of mega- and micro-tectonics. Prerequisite: Geology 1-2, Physics 11 and 12.

128 *Geomorphology* (3)

Teleki

Spring: lecture (2 hours), laboratory and field trips as arranged—afternoon.

The nature and evolution of earth forms. Prerequisite: Geology 1-2 or Geography 51.

132 *Economic Geology* (3)

Not offered 1959-60.

Genesis, distribution, mode of occurrence, and utilization of mineral raw materials. Mining industry in relation to economic life.

151-52 *Invertebrate Paleontology* (3-3)

Academic year: lecture (2 hours), laboratory (3 hours), and field trips as arranged—evening.

Taxonomy of fossil invertebrates, development of phyla, paleontology of invertebrate organisms. Prerequisite: Geology 1-2, 51, Biology 1-2, or Zoology 1-2. Laboratory fee, \$8 a semester

166 *Stratigraphy* (4)

Spring: lecture (2 hours), laboratory (4 hours), and field trips as arranged—evening.

Sedimentation and facies, evaluation of stratigraphic boundaries, principles of correlation, applied stratigraphic geology. Prerequisite: Geology 1-2, 51.

173 *Regional Geology* (3)

1960-61 and alternate years.

Topic for 1960-61: North America. Lecture and map work on regional distribution of geological formations and structures. This course may be repeated for credit. Prerequisite: Geology 1-2, Geology 51, or permission of instructor.

174 *World Regional Geology* (3)

Fall—evening.

Lecture and map work on the regional distribution of geological formations of the world, with special emphasis on geotectonics and paleogeography. Prerequisite: Geology 1-2, Geography 51, or permission of instructor.

THIRD GROUP

205-6 *Seminar** (3-3)

Academic year—as arranged.

Special topics. Does not repeat itself and may be elected in successive years.

211 *X-ray Crystallography* (3)

1960-61 and alternate years.

The structure of crystals as determined by the X-ray method.

212 *Crystal Chemistry** (3)

1960-61 and alternate years

Chemistry of the solid state. Bonding and coordination and role of crystalline structure in chemistry and mineralogy.

* Prerequisite: an adequate background in physics and chemistry, to be determined by the instructor.

241 *Geochemistry** (3)

Fleischer

1959-60 and alternate years: fall—evening.

Principles and theories on the abundance, relationships, and the distribution in the various rock and mineral species.

244 *Isotope Geology** (3)

Friedman

1959-60 and alternate years: spring—evening.

Investigation of geological phenomena by means of stable and unstable isotopes of elements and of changes in their abundance.

251-52 *Micropaleontology* (3-3)

Sohn

Lecture (2 hours), laboratory (2 hours).

Academic year—evening.

Identification with the binocular microscope of ostracoda and other fossil micro-organisms. Micropaleontological techniques, paleontological research methods, taxonomy, and paleoecology. Age determination and correlation of stratigraphic units. Laboratory fee, \$12 a semester.

299-300 *Thesis* (3-3)

The Staff

Academic year—as arranged.

* Prerequisite: an adequate background in physics and chemistry, to be determined in conference with the instructor.

GERMANIC LANGUAGES AND LITERATURES

Wolfram Karl Legner, Ph.D., *Professor of German, Executive Officer*
 *Gretchen Louisa Rogers, Ph.D., *Associate Professor of German*
 James Cecil King, Ph.D., *Assistant Professor of German*

Bachelor of Arts with a major in Germanic Languages and Literatures (Columbian College—Departmental).—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 70.

Required: in addition to the general requirements of Columbian College as stated on pages 85-91, German 51-52 plus eighteen semester hours in German courses above the first group; reasonable proficiency in speaking and writing German; History 39-40 or the equivalent; six semester hours in Philosophy selected with the approval of the adviser. Majors in German are strongly advised to study French.

Master of Arts in Germanic Languages and Literatures (Columbian College—Departmental).—Prerequisite: a Bachelor of Arts degree with a major in Germanic Languages and Literatures from this University, or the equivalent.

Required: the general requirements of Columbian College as stated on pages 91-95; a reading knowledge of French. The thirty hours of required work must include a thesis in the field of German literature or linguistics.

Bachelor of Arts in Education with a teaching field in German (School of Education).—Prerequisite: the Education curriculum, pages 72-73.

Required: the German option, page 175 and the professional courses listed on page 178.

FIRST GROUP

1-2 First-year German (3-3)

A year course; credit is not given for the first half until the second half is completed.

First half: fall—morning and evening; spring—morning; summer 1959.

Second half: fall—morning; spring—morning and evening; summer 1959.

The essentials of German grammar; translation of easy prose; pronunciation training, oral practice in electronic language workshop. *Workshop fee \$6 a semester.*

3-4 Second-year German (3-3)

A year course; credit is not given for the first half until the second half is completed.

First half: fall—morning and evening; spring—morning; summer 1959.

Second half: fall—morning; spring—morning and evening; summer 1959.

Selections from modern German prose; review of grammar. *Prerequisite:* German 1-2 or two years of high school German.

*On sabbatical leave spring semester 1959-60.

- 9-10 *German Conversation and Composition (3-3)* Rogers, ———

Academic year—morning.

- 49 *German Readings for Nonmajor Students (3)* Legner

Fall—Saturday morning; spring—evening; summer 1959.

Primarily for graduate students preparing for reading examinations. Undergraduates admitted with permission of the instructor. No academic credit for graduate students. Prerequisite: German 4 or the equivalent.

- 51-52 *Introduction to German Literature (3-3)* Legner

Academic year—morning.

Prerequisite: German 4 or the equivalent.

SECOND GROUP

- 103-4 *Goethe's "Faust"—Parts I and II (3-3)* Legner

1960-61 and alternate years

- 128 *German Literature from the Beginnings to the Age of Enlightenment (3)* Legner

1960-61 and alternate years

- 131-32 *German Literature of the Eighteenth Century (3-3)* King

1959-60 and alternate years academic year—evening.

The age of Lessing, Goethe, and Schiller.

- 141-42 *German Literature of the Nineteenth Century (3-3)* King

1959-60 and alternate years: academic year—evening.

Romanticism, realism, and naturalism.

- 151-52 *German Literature of the Twentieth Century (3-3)* Rogers

1960-61 and alternate years

- 179-80 *Advanced Composition for Undergraduate and Graduate Majors (1-1)* King, Legner

Academic year—as arranged.

THIRD GROUP

- 201-2 *Middle High German* (3-3)
1959-60 and alternate years: academic year—evening. Leg
- 205-6 *Gothic* (3-3)
A year course: credit is not given for the first half until the
half is completed. Leg
Not offered 1959-60.
Introduction to the comparative study of Germanic languages. K
- 209-10 *Old High German* (3-3)
1960-61 and alternate years. All
- 213-14 *Old Norse* (3-3)
Academic year—evening. K
- 221 *Introduction to Linguistics* (3)
Fall—as arranged.
Linguistics and comparative philology. Admission by permission
the instructor. Kin
- 222 *Indo-European Languages* (3)
Spring—as arranged.
Application of the laws of sound change in language; origin and de
velopment of suffixes and inflections; syntax. The St
- 299-300 *Thesis* (3-3)

HISTORY

- Elmer Louis Kayser, Ph.D., LL.D., *Professor of European History*
 Wood Gray, Ph.D., *Professor of American History*
 Howard Maxwell Merriman, Ph.D., *Professor of American Diplomatic History*
 *Roderic Hollett Davison, Ph.D., *Professor of European History*
 *William Columbus Davis, Ph.D., *Associate Professor of Latin American History*
 Ronald Bettes Thompson, Ph.D., *Associate Professor of European History*
 Richard Catlin Haskett, Ph.D., *Associate Professor of American History, Acting Executive Officer*
 Richard Wilson Reichard, Ph.D., *Associate Professor of European History*

Bachelor of Arts with a major in History (Columbian College—Field-of-Study).
 —Prerequisite: the Arts and Letters curriculum in the Junior College, see page 70.
 Electives must include History 39-40 and 71-72.
 Required: the general requirements of Columbian College as stated on pages 85-91 and the grade of "pass" on the History major examination at the end of the senior year.

The major, centered on the study of the rise, development, and spread, and the continuing challenges of Western civilization, is attested by a major examination. Under the guidance of an adviser the student will arrange his program in History to attain a balanced coverage of (1) the rise of civilization in Europe to the close of the French Revolution, (2) the spread of Western culture throughout the world since the close of the fifteenth century, (3) the historic problems of modern industrial civilization from the beginnings of the Industrial Revolution, and (4) the relations of the major nations of Europe and America in their world setting since the Napoleonic Wars. A six-hour research seminar to give training in fundamental techniques is a required part of each major's program, and a profound understanding of the continuity of Western civilization. For details relating to the administration and content of the major, see the pamphlet on this subject, which is available in the offices of the Dean of Columbian College and the Executive Officer of the History Department.

Bachelor of Arts with a major in Latin American Civilization (Columbian College—Field-of-Study).—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 70.
 Required: the general requirements of Columbian College as stated on pages 85-91 and the grade of "pass" on the Latin American Civilization major examination at the end of the senior year. The coordinated field of knowledge

* On leave of absence spring semester 1959-60.
 † On sabbatical leave spring semester 1959-60.

upon which the student will be examined includes political and social history, economic development, governmental structures and international relations, and the principal literary works and writers of the Latin American republics. The Department of History provides a proseminar (History 197-98) intended to assist the student in preparing himself for the major examination. For further details, see the pamphlet, which is available in the Office of the Dean of Columbia College.

Master of Arts in the field of History (Columbia College).—Prerequisite: the degree of Bachelor of Arts with a major in History from this University, or the equivalent, and the approval of the Department.

Required: the general requirements of Columbia College, as stated on pages 91-95. Of the twenty-four semester hours of required second- and third-group courses (exclusive of the thesis), at least six must be in third-group history courses; a maximum of six may be in a closely related field outside the Department of History as approved by the Department. Master's candidates are responsible for arranging with instructors of second-group courses for extra work in order to receive graduate credit for such courses.

Master of Arts in the field of Latin American Civilization (Columbia College).—Prerequisite: the degree of Bachelor of Arts with a major in Latin American Civilization from this University, or the equivalent.

Required: the general requirements of Columbia College, as stated on pages 91-95. Course work and the comprehensive examinations will embrace political and social history, governmental structures and international relations, economic development, and principal literary works of Latin America. The thesis must be written in any one of these four fields. All courses must be approved in advance by the Adviser.

Doctor of Philosophy (Graduate Council).—See pages 103-4

Bachelor of Arts in Education with a teaching field in History (School of Education).—Prerequisite: the Education curriculum, pages 72-73.

Required: the History option, page 175, and the professional courses on page 178.

FIRST GROUP

39-40 *The Development of European Civilization (3-3)*

Kayser, David
Rees

Academic year—morning and evening; summer 1959.

Primarily for freshmen. *First half:* the political, social, economic and cultural history of the Old World from ancient times to 1492. *Second half:* from 1715 to the present.

71-72 *The Development of the Civilization of the United States (3-3)*

Academic year—morning and evening; summer 1959.

Primarily for sophomores. *First half:* the political, social, economic and cultural forces of the United States in their world setting from 1492 to 1865. *Second half:* from 1865 to the present.

SECOND GROUP*

- 109 *Thought and Culture of the Western World I: Ancient Civilization* (3) Kayser

1960-61 and alternate years.

Intellectual and social awakenings in the Near East, Greece, and Rome; classical art, letters, philosophy, and science.

- 110 *Thought and Culture of the Western World II: the Middle Ages and Renaissance* (3) Kayser

1960-61 and alternate years.

Christian thought from Augustine to Thomas Aquinas; humanism and the classical revival, rise of vernacular literatures, the fine arts.

- 119 *Thought and Culture of the Western World III: from the Reformation through the Age of Reason* (3) Kayser

1959-60 and alternate years: fall—morning.

The growth of Protestant polity and doctrine; the Counter-Reformation; the scientific revival, rationalism and the Enlightenment; arts and letters.

- 120 *Thought and Culture of the Western World IV: Intellectual Aspects of the Modern Age* (3) Kayser

1959-60 and alternate years: spring—morning.

The evolution of democratic and social concepts, liberalism and authoritarianism in religion and in politics; the impact of modern science and technology, romanticism; and realism.

- 130 *Nationalism* (3) Kayser

Summer 1959.

The historical evolution of modern nationalism.

- 141-42 *History of France* (3-3) Reichard

1959-60 and alternate years: academic year—morning.

A general survey of the political, social, and cultural development of France. *First half:* from earliest times to 1789. *Second half:* from 1789 to the present.

- 143-44 *History of Germany* (3-3) Reichard

Academic year—morning; summer 1959—History 143 (3).

The political, social, and cultural development of the German people. *First half:* from the Reformation to 1871. *Second half:* from 1871 to the present.

* History 39-40 is prerequisite to courses 109 through 112 and 100 through 106. History 71-72, to courses 171 through 184, either History 39-40 or 71-72, to courses 161 through 166.

145-46 *Russian History* (3-3)

Academic year—evening

A political and cultural survey. *First half:* the Golden Age of the old regime, 1700-1914. *Second half:* the Bolshevik revolution and the Soviet era, since 1914.

147 *Economic History of Europe* (3)

Fall—evening.

A survey from ancient times to the present day.

148 *Oversea Expansion of Europe* (3)

Not offered 1959-60

International rivalries and the impact of European civilization on Africa and the Pacific basin since 1500, with emphasis on the 19th and 20th centuries.

149-50 *European Diplomatic History* (3-3)

Davison, —

Academic year—evening.

Background of the European state system and of diplomatic practices and relations since the Congress of Vienna, with emphasis on policies and actions of the great powers and their statesmen. *First half:* to 1878. *Second half:* since 1878.

151-52 *English History* (3-3)

1960-61 and alternate years

A general survey of the development of political, social, and economic institutions of lasting significance in the English speaking world. *First half:* to 1689. *Second half:* since 1689.

161 *Ancient Americans* (3)

1960-61 and alternate years.

A study of the Maya, Aztec, Inca, and other early civilizations of North and South America.

162 *Iberian Background of Latin America* (3)

1960-61 and alternate years.

History of Spain and Portugal, with emphasis on developments leading to the rise and decline of the Spanish and Portuguese empires.

163 *Colonial Latin America* (3)

Fall—morning.

Political, economic, social, and institutional developments in Spanish and Portuguese America from the conquest through the wars of independence.

164 *South America since Independence* (3) Davis

Alternate spring and summer terms: summer 1960; spring 1961.

Development of the independent South American states in the 19th and 20th centuries.

166 *Mexico and the Caribbean since Independence* (3)

Alternate spring and summer terms: summer 1959; spring 1962.

A survey of the republics of Mexico, Central America, and the Caribbean islands.

171-72 *Social History of the United States* (3-3) Gray

Academic year—morning; summer 1959—History 171 (3).

Daily life, institutions, intellectual and artistic achievements of the Agrarian Era, 1607-1861; and the Urban-Industrial Era, 1861 to the present time.

173 *Representative Americans* (3) Gray

Spring—morning; summer 1959.

A biographical approach to national history. Some fifty significant and pivotal personalities in the development of the United States in government, business, science, religion, journalism, the arts, and social reform.

174 *Economic History of the United States* (3) Gray

Spring—evening.

Main trends in the development of American agriculture, industry, and trade since 1607, with emphasis on tendencies and problems since the Civil War.

175-76 *Political and Constitutional History of the United States* (3-3) Haskett

Academic year—evening.

The programs and conflicts of group interests in America within the political and legal framework. *First half:* to the eve of the Civil War. *Second half:* the Civil War to 1945.

177 *The South* (3) Gray

Fall—morning.

Rise of the plantation system and slavery; the intersectional conflict; and the problems and progress of the New South.

178 *The West* (3)

Not offered 1959-60.

The role of the frontier in American history.

181-82 Diplomatic History of the United States (3-3)

Merriman

Academic year—morning and evening; summer 1959.

Tendencies toward isolation, expansion, and collectivism; disputes with foreign countries and their settlement; and the activities of the American secretaries of state and diplomatic agents. *First half:* to 1861. *Second half:* since 1898.

183 Oversea Expansion of the United States (3)

Merriman

Summer 1959.

The political, economic, social, and cultural life of our outlying possessions.

184 Canada and the United States (3)

Merriman

Not offered 1959-60.

The historical background and main trends in the relationship of the two English-speaking peoples of North America.

190 History of India (3)

Thompson

Not offered 1959-60.

The civilization of India and her neighbors from the beginning to independence.

191-92 Current History (1-1)

Kaye

Academic year—afternoon.

Contemporary events in their world setting.

193 History of the Near East (3)

Davis

Fall—morning.

The Byzantine, Arab, Persian, and Islamic backgrounds of Near Eastern history; the rise and decline of the Ottoman Empire; the action of European powers in the area; and the Ottoman breakup into the Turkish Republic and other successor states.

195-96 History of the Far East (3-3)

Thompson

Academic year—morning.

First half: the civilization of China and Japan from the beginning to 1600. *Second half:* the modern Far East under the impact of the West since 1600.

197-98 Proseminar in Latin American Civilization (3-3)

Davis, Ray

Academic year—as arranged.

Reading course for coordination and review. Open only to majors in Latin American Civilization.

- 199-200 *Proseminar: Readings for the History Major (3-3)* Thompson

Academic year—evening; summer 1959.

Limited to majors in History. Readings and discussions on main trends in the history of Western civilization, including representative selections from the classics of historical literature.

THIRD GROUP*

- 241-42 *Seminar in Modern European History (3-3)* Reichard

Academic year—evening.

- 244 *Reading Course in Modern European History (3)* Davison

Not offered 1959-60.

Primarily for graduate students.

- 246 *Seminar in Eurasian History (3)* Thompson

Spring—evening.

- 247 *Reading Course in Eurasian History (3)* Thompson

Fall—as arranged.

Primarily for graduate students.

- 249 *Seminar in European Diplomatic History (3)* Davison

Fall—evening.

- 261-62 *Seminar in Latin American History (3-3)* Davis

1959-60 and alternate years. *First half:* fall—afternoon. *Second half:* not offered 1959-60.

- 271-72 *Seminar in the Social History of the United States (3-3)* Gray

Academic year—evening.

- 275-76 *Seminar in American Political and Constitutional History (3-3)* Haskett

Academic year—evening.

- 281-82 *Seminar in the Diplomatic History of the United States (3-3)* Merriman

Academic year—afternoon.

* Approval of the instructor is required for registration in each third-group course.

285-86 *Reading Course in American Diplomatic History (3-3)*

Academic year—evening.

Primarily for graduate students.

Merrima

291-92 *Seminar (3-3)*

Academic year—as arranged; summer 1959.

Prerequisite: approval of the Department.

The Sta

294 *Seminar in the History of the Modern Near East (3)*

Not offered 1959-60.

Davis

299-300 *Thesis (3-3)*

Academic year—as arranged; summer 1959.

Required of all candidates for the Master's degree specializing in history.

The Sta

HOME ECONOMICS

Frances Kirkpatrick, A.M., *Professor of Home Economics, Executive Officer*

Kathryn Mildred Towne, A.M., *Professor of Home Economics*

Bachelor of Science with a major in Home Economics (School of Education).—Prerequisite: the Home Economics curriculum in the Junior College, see page 73. The requirements for the degree are stated on pages 169-70 and 179.

Bachelor of Arts in Education with a teaching field in Home Economics (School of Education).—Prerequisite: the Education curriculum on page 73.

Required: the Home Economics option, pages 175-76 and the professional courses listed on page 178. (See also special bulletin.)

FIRST GROUP

1 *Food Selection and Preparation* (3) Kirkpatrick

Fall—morning.

Composition, selection, and preparation of food; analysis of recipes; standard products; planning, preparing, serving, and estimating the cost of meals. Material fee, \$18.

22 *Clothing: Its Selection, Cost, and Care* (3) Towne

Fall—evening; spring—morning.

Clothing selections—the economic, aesthetic, and hygienic aspects; the application of the principles of color and design to individual selection; the care of clothing.

51 *Family Meals* (3) Kirkpatrick

Spring—evening.

The choice, purchase, preparation, and service of foods; dietary standards, food habits, and the nutritional needs of the family; problems of purchasing, care, and use of food by the consumer. Material fee, \$11.

53 *Family Health and Household Sanitation* (3) Kirkpatrick

Spring—morning.

Home hygiene and home care of the sick; the principles of household sanitation in relation to health and diseases.

62 *Clothing Construction* (3) Towne

Spring—afternoon.

Simplified techniques and unit method of construction suitable for cotton, wool, silk, and man-made fibers; the use of commercial patterns

and their alteration; the proper selection of color, design, and fabric.
Material fee, \$8.

71 *Costume Design and Fashion Economics* (3)

Towse

Fall—afternoon.

Factors determining fashions and effect on cost of clothing, problems of the consumer of textiles and clothing, historic costume and its relation to modern dress. Material fee, \$8.

72 *Household Textiles* (3)

Towse

Fall—morning.

Properties, uses, and tests of the different textile fibers and fabrics and development of judgment and knowledge of standard for the consumer of clothing and house-furnishing material. Material fee, \$8.

77 *Marketing* (3)

Not offered 1959-60.

Purchasing of foods as it relates to the home and to the institution.

SECOND GROUP

102 *Advanced Food Preparation* (3)

Kirkpatrick

Spring—morning.

The application of the fundamental processes of food preparation to a wider range of food materials and various services for different occasions. Material fee, \$18.

106 *Quantity Cookery* (3)

Not offered 1959-60.

Towse

123 *Household Finance and Problems of the Consumer* (3)

Fall—morning.

Economic problems of the family in modern industrial society, family income, income apportionment and household expenditures, laws affecting the home, investments, consumer buying.

Towse

143 *Advanced Clothing Construction* (3)

Spring—evening.

Problems of clothing construction and flat pattern designing. Material fee, \$8.

148 *Food Problems and Demonstration Methods* (3) Kirkpatrick

Fall—morning.

Factors affecting the preparation of standard products from the experimental viewpoint, principles of demonstration. Material fee, \$18.

152 *Nutrition* (3) Kirkpatrick

Fall—evening.

Lecture course on the principles of normal and abnormal human nutrition. Laboratory work on the calculation and preparation of dietaries. Laboratory fee, \$8.

154 *Diet Therapy* (3)

Not offered 1959-60.

Study of nutrition as applied to diet and disease. Material fee, \$8.

164 *Child Nutrition* (3) Kirkpatrick

Not offered 1959-60.

Basic principles in nutrition and growth of the infant, preschool, and adolescent child in health and disease.

168 *Institutional Management* (3)

Not offered 1959-60.

Study of the organization, equipment, and marketing problems of institutions.

171 *House Furnishing* (3) Towne

Fall—afternoon.

Home planning from the historic, artistic, economic, and sanitary viewpoints; home furnishings such as linens, dishes, floor covering, mattresses, etc. Material fee, \$5.

181 *The Child in the Home* (3) Kirkpatrick

Spring—afternoon.

Care and development of children, parent-child relationships.

192 *The Home, Its Management and Equipment* (3) Kirkpatrick

Not offered 1959-60.

Economic management of the home; distribution of time and energy; problems in the selection, arrangement, and care of equipment.

- 193 *Supervision of Home Management* (3) The Staff
Fall—as arranged.
Field work under supervision. Designed to meet requirements of those preparing to teach in federally aided schools.
- 195-96 *Special Problems* (3-3) The Staff
Academic year—as arranged.
Individual investigation or study under the guidance of a member of the Staff: such problems as marketing, draping, tailoring, and techniques of making decorations for clothing and for the home.
- 197-98 *Proseminar* (3-3) The Staff
Academic year—evening.
The study of the most recent materials and problems in the various phases of home economics.

JOURNALISM

Ross Pelton Schlabach, Jr., M.S., *Professor of Journalism, Executive Officer*

Robert Crumpton Willson, A.B., *Associate Professor of Journalism*

Frank Landt Dennis, A.B., LL.B., *Lecturer in Journalism*

John Vincent Hinkel, M.S., *Lecturer in Journalism*

Kip Ross, *Lecturer in Journalism*

Coit Taylor Hendley, Jr., A.B., *Lecturer in Journalism*

Louis Robinson, A.B., *Lecturer in Journalism*

Louis Ray Stockstill, A.B., *Lecturer in Journalism*

SPECIAL LECTURERS

Richard Hollander, Managing Editor, *The Washington Daily News*

James Russell Wiggins, Executive Editor, *The Washington Post and Times Herald*

Bachelor of Arts with a major in Journalism (Columbia College—Departmental).—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 70, including English 51-52 or 71-72; History 71-72; Political Science 9-10, and Journalism 71-72.

Required:

- (1) The general requirements of Columbia College, as stated on pages 85-91.
- (2) Twenty-four hours of second-group courses in Journalism as follows:
 - (a) Journalism 111, 115, 196, 198; (b) six hours chosen from Journalism 121, 133, 137, 144; (c) six hours chosen from Journalism 140, 142, 143, 145, 191.
 - (3) Twelve hours of second-group courses, chosen in consultation with the major adviser, in one other department of Columbia College. Students selecting science may take courses in more than one department.

FIRST GROUP

71-72 *Journalism in American Society* (3-3) Schlabach, Willson

Academic year—morning and evening.

Evolution of newspapers and other media in relation to political, social, and economic life; the concept of press freedom; problems of contemporary journalism.

SECOND GROUP

111 *Reporting* (3)

Schlabach

Fall—morning; spring—evening.

Instruction and classroom practice in gathering, evaluating, and writing news; emphasis on newspapers, other media considered.

115 *Editing and Make-up* (3)

Schlabach

Fall—evening.

Editing of news and other material for publication, typesetting and display, use of pictures and other graphic presentations.

121 *Advanced Reporting: Magazine Feature Articles* (3)

White

Fall—morning; spring—evening.

Instruction and practice in writing magazine articles, material which is obtained through independent investigation.

133 *Advanced Reporting: Community News* (3)

Hendrick

Fall—evening.

Instruction and practice in coverage and writing of local news.

137 *Advanced Reporting: National Affairs* (3)

Stockton

Spring—afternoon.

Instruction and practice in coverage and writing of federal government news from the point of view of the press association.

140 *Pictorial Journalism* (3)

R. S.

Fall—evening.

Photographic techniques affecting publication, the illustration of the story angle, standards of judgment in selection and use of pictures, captions, editing techniques, cropping for effective reproduction.

Robinson

142 *Retail Newspaper Advertising* (3)

Spring—evening.

Retail newspaper advertising management, coordination of news advertising with retail sales patterns, advertising reader service, preparation, production methods.

White

143 *Industrial Communications* (3)

Spring—morning.

An introduction to the field of corporate journalism. Writing, editing the employee magazine. Preparation of annual reports, including stockholder publications, and external house organs.

White

144 *Advanced Reporting: Specialized Press* (3)

Not offered 1959-60.

Instruction and practice in coverage and writing of news and feature for the business, scientific, and technical press and other specialized media.

145 *Principles and Problems of Public Relations* (3) Hinkel

Fall—Saturday morning.

Principles, problems, and ethics of public relations for government agencies, commercial establishments, educational and other public institutions. Case histories of successful programs.

151 *Editorial Writing* (3) Schlabach

Fall—evening.

Instruction and practice in writing of editorials on public affairs.

196 *Seminar* (3) Schlabach

Spring—as arranged.

For Journalism majors only. Research in areas relating journalism to secondary fields of study.

198 *Law of the Press* (3) Dennis

Spring—evening.

Freedom of the press, censorship, legislative controls, publications as contempt of court, copyright, news gathering agencies, labor law and the newspaper business, law of libel, privileged matter, fair comment on public characters, right of privacy.

LAW

William Thomas Fryer, A.B., LL.B., J.D., *Professor of Law*
 Carville Dickinson Benson, A.B., LL.B., S.J.D., *Professor of Law*
 James Forrester Davison, A.B., LL.B., LL.M., S.J.D., *Professor of Law*
 Oswald Symister Colclough, B.S., LL.B., LL.D., *Professor of Law*
 *Herman Israel Orentlicher, A.B., LL.B., *Professor of Law*
 Leroy Sorenson Merrifield, A.B., LL.B., M.P.A., S.J.D., *Professor of Law*

Law

Orville Hassler Walburn, A.B., LL.B., J.D., *Professor of Law*
 David Benson Weaver, A.B., LL.B., *Professor of Law*
 Louis Harkey Mayo, B.S., LL.B., J.S.D., *Professor of Law*
 †Glen Earl Weston, B.S., LL.B., *Professor of Law*
 Robert McKinney Cooper, Ph.M., J.D., *Professor of Law*
 William Thomas Mallison, Jr., A.B., LL.B., *Professor of Law*
 John Wingfield Jackson, B.S., LL.B., *Adjunct Professor of Law*
 Frank Hammett Myers, LL.B., LL.M., *Adjunct Professor of Law*
 John Albert McIntire, A.B., LL.B., LL.D., *Professorial Lecturer in Law*
 Justin Lincoln Edgerton, A.B., LL.B., *Professorial Lecturer in Law*
 Philip Field Herrick, A.B., LL.B., LL.M., *Professorial Lecturer in Law*
 George Edward Monk, A.B., LL.B., LL.M., *Professorial Lecturer in Law*

Law

Charles James Zinn, A.B., LL.B., LL.M., S.J.D., *Professorial Lecturer in Law*

in Law

Joseph Dach, LL.D., LL.B., *Professorial Lecturer in Law*
 Louis James Harris, A.B., LL.B., S.J.D., LL.M., *Professorial Lecturer in Law*

in Law

John Joseph Czyzak, A.M., LL.B., *Professorial Lecturer in Law*
 Leonard Patrick Walsh, A.B., LL.B., *Professorial Lecturer in Law*
 Edward Abbot Beard, LL.B., *Professorial Lecturer in Law*
 Robert Galloway Dixon, Jr., Ph.D., LL.B., *Associate Professor of Law*
 Jackson Reid Hambrick, A.B., LL.B., *Associate Professor of Law*
 Paul Archibald Rose, LL.B., *Associate Professorial Lecturer in Law*
 George Nelson Robillard, B.S., LL.B., *Associate Professorial Lecturer in Law*

Law

Herbert Joseph Liebesny, J.D., *Associate Professorial Lecturer in Law*
 Carl Clell Davis, B.S., LL.B., LL.M., *Associate Professorial Lecturer in Law*

Law

Thomas Hayward Brown, *Associate Professorial Lecturer in Law*
 Pasquale Joseph Federico, A.M., LL.B., *Associate Professorial Lecturer in Law*

in Law

* On sabbatical leave fall semester 1950-60
 † On sabbatical leave spring semester 1950-60

Gust Angelo Ledakis, B.B.A., LL.B., S.J.D., *Assistant Professor of Law*
 Monroe Henry Freedman, A.B., LL.B., LL.M., *Assistant Professor of Law*

Robert James Harris, A.B., LL.B., *Assistant Professor of Law*
 Crombie James Dickinson Garrett, A.B., LL.B., *Lecturer in Law*
 William Woolcott Goodrich, LL.B., *Lecturer in Law*
 Vincent Kleinfeld, LL.B., *Lecturer in Law*
 George Joseph Goldsborough, B.S., J.D., *Lecturer in Law*
 Nicholas Eugene Allen, B.S., LL.B., *Lecturer in Law*
 Manuel Frederick Cohen, B.S., LL.B., *Lecturer in Law*
 Sheldon Stanley Cohen, A.B., J.D., *Lecturer in Law*
 William Edward Guilian, LL.B., *Lecturer in Law*
 Ralph Clarke Nash, Jr., A.B., J.D., *Lecturer in Law*
 Franklin Morton Schultz, A.B., LL.B., *Lecturer in Law*
 Burton Stevenson, LL.B., B.S., *Lecturer in Law*
 Henry Newton Williams, Ph.D., LL.B., LL.M., *Lecturer in Law*
 John Alexander Kendrick, A.B., LL.B., *Clerk of the Trial Practice Court*
 Dudley Graham Skinker, LL.B., *Associate Clerk of the Trial Practice Court*

For the requirements for the degrees of *Bachelor of Laws*, *Juris Doctor*, *Master of Laws*, *Master of Comparative Law*, *Master of Comparative Law (American Practice)*, and *Doctor of Juridical Science*, see pages 130-33, 135-36.

FIRST YEAR

100 *Agency* (2) Cooper, Freedman, R. Harris
 Fall—evening; spring—morning; summer 1959.

Master and servant (status of agent), respondeat superior, nature of agency relation, actual authority, parties (disclosed and undisclosed principal), unauthorized transactions, notice, notification.

110 *Constitutional Law* (4) Czyzak, Dixon
 Spring—morning and evening.

Basic principles of American constitutionalism; judicial function in constitutional cases; implementation of doctrines of separation of powers, federalism, limited government; development and exercise of national powers; introduction to civil rights and liberties.

115-16 *Contracts I-II* (4-2) Mayo, Ledakis, Schultz
 Academic year—morning and evening; summer 1959.

Scope of protection accorded contracts; specific performance of contracts other than land transactions; damages, restitution. Mutual assent: offer and acceptance, misunderstanding, mistake, reformation, parol evidence rule. Consideration, third party beneficiaries, assignments, conditions. Statute of Frauds.

125 *Criminal Law and Procedure* (4)

Spring—morning and evening; summer 1959.

Origin and purposes of criminal law; elements of criminal liability; mental disorders; solicitation, attempt, and conspiracy; crimes against the person, against property, and against both; statutory offenses; criminal procedure, with consideration of Federal Rules of Criminal Procedure.

135 *Legal Method and Legal System* (4)

Fryer, Benson, Davison, Orentlicher, Merrifield, Goldsborough

Fall—morning and evening; spring—morning and evening; summer 1959.

Introduction to substantive and procedural law dealing with basic concepts; training in method and technique of case law and legal writing; using modern case records; practice in use of law books and use of precedents under doctrines of stare decisis, law of the case, and res judicata; development of Anglo-American legal system; organization of judiciary and bar, stressing enforcement of ethical standards.

145 *Personal Property* (2)

Fryer, Dixon, Mallory, Guilian, N.

Fall—morning and evening; spring—evening; summer 1959.

Concepts of property, including interests created by bailments, and pledges; methods of acquiring ownership.

150 *Real Property* (2)

Benson, Walburn, Ledakis, Stevenson

Fall—evening; spring—morning; summer 1959.

Historical background of the law of estates and conveyances, possessory estates, concurrent estates.

160 *Torts* (4)

Merrifield, Walburn, R. Harris, Garrett

Fall—morning; spring—morning and evening.

Liability for harm to persons or tangible things; defamation and invasion of privacy.

SECOND YEAR

202 *Administrative Law* (4)

Spring—morning and evening; summer 1959.

The position of the administrative process in the separation of powers including the status of administrative personnel, administrative law, judicial scrutiny of administrative action, discretion, and law making—particularly as relating to federal administrative action.

205 *Brief Writing and Oral Argument* (2)

Not offered 1959-60.

Exposition and study of the basic techniques of written and oral legal argumentation. Each student will be required to write, as a term paper, a brief presenting contentions based on the actual record in an unargued case.

210 *Business Associations* (4)

Weaver

Spring—morning and evening; summer 1959.

Contrast of the partnership and corporation as alternative forms of organization; organizing partnerships and corporations—formalities, capital contributions, share structure; problems of operation; relations between partners; roles of shareholders, directors, officers; control devices; distributions to owners; voluntary reorganization; dissolution and termination.

215 *Civil Procedure* (4)

Walburn, R. Harris

Fall—morning and evening; summer 1959.

Pleadings, discovery, joinder, forms of trial and related proof problems. Emphasis is on Federal Rules of Civil Procedure and other modern codes.

219 *Commercial Paper* (4)

Orentlicher, Ledakis

Fall—morning and evening; summer 1959.

Bills of exchange, promissory notes and checks, especially under the Negotiable Instruments Law.

224 *Commercial Transactions* (4)

Orentlicher

Spring—morning and evening.

The law relating to the sale and distribution of goods, and to the security financing devices utilized in this connection, with particular attention to the effect of uniform laws.

230 *Conveyances* (2)

Benson, Walburn

Fall—morning; spring—evening; summer 1959.

Conveyances, recording; easements, profits, covenants, and equitable servitudes; adverse possession and adverse user.

235 *Domestic Relations* (2)

Williams

Fall—morning and evening; summer 1959

Marriage, annulment, and divorce; adoption and custody of children; economic relations.

Fryer, Weston

240 Evidence (4)

Spring—morning and evening; summer 1959.

Functions of court and jury; qualifications and examination of witnesses; opinion, relevancy and scientific evidence; proof of writing; application of the hearsay rule.

Coe

243 Federal Jurisdiction (2)

Fall—morning and evening.

Constitutional and statutory origins of federal courts, cases arising under the laws and the Constitution, diversity of citizenship, jurisdictional amount, removal procedure and jurisdiction, limitations on general jurisdiction, state and federal conflicts, substantive law applied in federal courts.

Bennett

248 Future Interests (2)

Spring—morning and evening.

Future interests at common law and under modern statutes, construction of limitations, powers of appointment, rule against perpetuities.

251 Insurance (2)

Summer 1959.

The insurance device in life, property, and other risks.

Mallory

254 International Law and World Order (4)

Fall—morning and evening.

Traditional content of course in international law presented in context of values and institutions of the world community; formal prescriptions and effective practice concerning participants in decision-making processes; roles of individuals, international public organizations, political parties, pressure groups, private associations, and national states.

Merrill

259 Labor Law (4)

Spring—morning and evening.

Law governing labor-management relations, organization and representation of employees, regulation of economic weapons, enforcement of collective bargaining agreements, interunion and intraunion relations.

Hambrick, S. Cohen

265 Legal Accounting (2)

Fall—morning; spring—evening; summer 1959.

A study of elementary accounting principles and techniques; application of accounting principles to legal problems.

270 *Legislation (2)*

Fryer, Mallison

Fall—morning and evening

The legislative process and roles of various participants in the process; operation of the United States Congress, including fact finding, organization, and procedure; problems of statutory interpretation.

274 *Taxation—Federal Estate and Gift (2)*

Hambrick

Fall—morning and evening.

A survey of the substantive provisions of the federal estate and gift tax laws, including inter vivos transfers, transfers in contemplation of death, joint interests, life insurance proceeds, property subject to powers of appointment, the marital deduction and split gifts; tax procedure.

279 *Taxation—Federal Income (4)*

Hambrick, Weaver

Spring—morning and evening; summer 1959.

Survey of substantive provisions of federal income tax, including concept of gross income, limitations on allowable deductions, problems of capital gains taxation, nontaxable exchanges of property, basis problems, provisions affecting the taxation of the family, and principles of income tax accounting.

285 *Trusts and Estates (4)*

Weaver, Allen

Fall—morning and evening.

Formalities of execution of wills; problems of construction, revocation, contest; limits on testamentary power; intestate succession. Creation of trusts, inter vivos and testamentary; administration of decedents' estates and trust estates.

295 *Unfair Trade Practices (4)*

Weston

Fall—morning and evening.

Unfair trade practices at common law and under statutes; trademarks, trade names; copyright law; misappropriation of ideas; protection of competitors and consumers against false advertising under Federal Trade Commission Act; resale price maintenance under state Fair Trade Acts; miscellaneous business practices.

THIRD YEAR

302 *Admiralty (2)*

Davis

Spring—evening.

Federal and state jurisdiction; jurisdiction over waters, craft, contracts, torts, crimes, in equitable matters, etc.; laws applicable to maritime workers and maritime liens.

303 *Aviation Law* (2)

Not offered 1959-60.

Procedure before Civil Aeronautics Board; legal problems arising in connection with air transportation and airports, international conventions and organizations.

Davison

307 *Comparative Law* (4)

Fall—evening.

The Civil Law System; general introduction to foreign law as exemplified by Roman Law and the modern French Law; comparative study of administration of justice, legal institutions, and methods of international law practice and working with foreign lawyers.

Davison

309 *Conflict of Laws* (4)

Fall—morning and evening; summer 1959.

Legal problems arising from occurrences transcending state or national boundaries; jurisdiction; foreign judgments; constitutional influences; theoretical bases of choice of law principles and their application to specific fields, including torts, contracts, property, family law, administration of estates, and business associations.

Davison

313 *Constitutional Interpretations* (2)

Not offered 1959-60.

Advanced course in constitutional law. The Constitution and constitutional tradition, process of judicial decision-making, significance of "due process", current constitutional developments, adequacy of the traditional system of powers and limitations, introduction to comparative constitutional law.

Ledakis

318 *Creditors' Rights* (4)

Summer 1959.

Remedies of unsecured creditors; judgments, fraudulent conveyances, creditors' agreements, equity and statutory receiverships, and bankruptcy. The general approach is that of law administration.

Weston, Freedman

321-22 *Current Decisions* (2-2)

Academic year—morning and evening.

Required of, and limited to, members of the student staff of the Law Review.

330 *Federal Antitrust Laws* (4)

Spring—evening.

Restraints of trade at common law and under Sherman Antitrust Act of 1890, Federal Trade Commission and Clayton Acts by mergers, monopolies, price-fixing agreements, trade associations, exclusive dealing agreements, tie-in sales, and trade boycotts; patents and copyrights under antitrust laws.

335 *Jurisprudence* (2)

Mayo

Fall—evening; spring—morning.

History of jurisprudence; schools of jurists, particularly the nineteenth century schools; sociological jurisprudence; theories of justice; the nature of law; law and morals; law and the state; the scope and subject matter of law; sources and forms of law; the traditional element; analysis of general legal concepts.

339 *Labor Arbitration* (2)

Merrifield

Not offered 1959-60.

Labor arbitration and collective bargaining; role of the lawyer in negotiation and administration of collective labor agreements; practices, procedures, and substantive issues in labor arbitration.

341 *Labor Standards and Social Security Legislation* (2)

Merrifield

Fall—evening.

Legal problems arising under federal and state statutes dealing with labor standards and social security. Particular emphasis is placed upon the regulation of wages and hours, workmen's compensation, and insurance against unemployment and old age.

345 *Legislative Drafting* (2)

Zinn

Fall—evening.

Advanced instruction and practice in legislative drafting. Prerequisite: Law 270.

349 *Local Government Law* (2)

Mallison

Spring—morning and evening.

The decision-making processes in metropolitan and local communities; types and objectives of city, county, and special function local government units; intergovernmental relations; original organization and changes; local lawmaking; community planning and development.

355 *Mortgages* (2)

Orentlicher

Summer 1959.

Security interests in real property, their creation, transfer, enforcement, and extinguishment.

359 *Patent Law I*• (2)

Robillard

Fall—evening.

Origin and nature of patents, patentable subject matter, classes of patents, novelty, utility, invention, patent claims and their interpretation, acts constituting infringement, correction of patents.

360 Patent Law II (2)

Spring—evening.

Lectures and discussion; licensing and protection of industrial property; uses and abuses of patents; governmental regulation; protection abroad; economic and social functions of patents, trade-marks, and copyrights. Prerequisite: Law 359.

Rost

362 Patent Office Practice* (2)

Spring—evening.

Rules and practice; appeal and interference procedure.

365-66 Patent Trial Practice Court* (2-2)

Brown, Federico

Academic year—evening.

Practice before the United States Court of Customs and Patent Appeals and the federal courts. Prerequisite: forty-two semester hours including Law 215 and 240. Law 359, which is also required, may be taken concurrently.

This course may be elected instead of Law 385-86 to satisfy the Trial Practice Court requirement.

Fryer

370 Public Utilities (2)

Not offered 1959-60.

Regulation by federal, state, and municipal authorities concerned with licensing, rates, services, and practices, with emphasis on federal regulation of interstate operations; judicial review.

Orentlicher

376 Restitution (2)

Spring—morning and evening; summer 1959.

Remedies at law and in equity for restitution of benefits conferred, especially as based on the concept of unjust enrichment.

Orentlicher

380 Suretyship (2)

Summer 1959.

The law of suretyship, especially in the context of accommodation credit and commercial and financial practices, with attention to informal and nonconsensual suretyship relations and the proper suretyship principles in the solution of legal problems generally.

385-86 Trial Practice Court (2-2)

Jackson, Myers, Edgerton, Hees, Monk, Walsh, Beard, Kendrick, Skene

Academic year—morning and evening.

Trial of assigned cases; trial tactics and techniques; pre-trial and room procedures pursuant to Federal Rules.

To be taken in the senior year. Prerequisite: forty-two semester hours, including Law 215 and 240.

* Patent law students should take Law 349 and Law 363 concurrently in the fall semester and Law 362 and Law 366 concurrently in the spring semester.

391 *World Law* (2)

Mallison

Not offered 1959-60.

International organization; the legal aspects of the United Nations; international constitutional law.

GRADUATE COURSES

401 *Administrative Law Seminar* (2)

Davison

Spring—evening.

Group study of specific problems in administrative law.

408 *Constitutional Law Seminar* (2)

Dixon

Spring—evening.

Group study of contemporary problems in constitutional law.

412 *Control and Use of Atomic Energy* (2)

Mayo

Spring—evening.

Various legal problems involved in the control and use of atomic energy will be examined, including the Atomic Energy Act, the policy underlying the present government monopoly, the security problem of safeguarding atomic military information, the implications in prospective industrial control and use, and legal means of protecting personal interests against the possible consequences of atomic warfare.

416 *Criminal Practice and Administration* (2)

Cooper

Spring—as arranged.

Group study of the fundamental aspects of criminal procedure with special reference to practice before the District of Columbia and federal courts; the law of arrest, searches and seizures, self-incrimination, the function of the preliminary examination and grand jury, sufficiency of indictments, trial procedure, and the order of pleas and motions. Registration limited to fifteen students.

420 *Estate Planning Seminar* (2)

Weaver

Spring—evening.

Group study of the effective disposition of wealth, inter vivos and testamentary gifts, conservation for owner's future use, use of insurance, tax and administrative problems, business interests, pension and profit-sharing arrangements.

424 *Evidence and Trials Seminar* (2)

Fryer

Fall—evening.

Study of selected problems involving presentation of documentary proof and expert testimony in connection with the reforms sought by the Uniform Rules of Evidence and recent developments in the field of forensic medicine.

428 Food and Drug Law (2)

Goodrich, Klement

Spring—evening.

A lecture and discussion course dealing with the Federal Food, Drug, and Cosmetic Act and governmental controls thereunder. Both government and industry viewpoints are considered.

431 Government Contracts I (2)

Fall—evening.

A consideration of the basic power of the Federal Government to enter into contracts; the nature and construction of such contracts; military and war or defense powers aspects of government procurement, including administrative and legislative policy and procedures; forms of contracts; standard clauses; advertised bid procedure problems; negotiation of contracts; modification of contracts; remedies on contractual claims.

432 Government Contracts II (2)

Spring—evening.

Special problems in government contracts, including adjustments, relief; procedure for prosecuting claims under government contracts; attempts at price, cost, or profit control; termination.

438 International Law Seminar (2)

Spring—evening.

Group study of contemporary problems in international law.

442 Labor Law Seminar (2)

Fall—evening.

Group study of contemporary problems in labor law.

446 Law of Money and Monetary Obligations (2)

Not offered 1959-60.

Introductory survey of the provisions of public law by which money is administered, relating particularly to the Federal Reserve Act, the legal character of money and of monetary obligations, the "dollar-for-dollar" rule and its limitations; protective clauses, commodity, and index clauses. Particular emphasis will be placed on the law relating to foreign money.

449 Law of the Near East (2)

Fall—evening.

A study of the law of the Arab countries, including the basic principles of the Islamic law, an analysis of the present day codes, and a consideration of the Western influences on the laws of the Arab countries.

455 *Legal Problems in Modern Methods of Warfare* (2) Mallison

Not offered 1959-60.

The contemporary international law of war: legal aspects of modern methods of coercion (economic, political, psychological, and military); regulation of hostilities; the special problems of atomic, bacteriological, and chemical weapons; war crimes.

459 *Military Law and Jurisdiction* (2)

Not offered 1959-60.

Sources of military jurisdiction; military law proper, including court-martial jurisdiction and procedures before, during, and after trial; military government; martial law; laws of war and treatment of offenders.

463 *Regulation of Communication Media* (2) Mayo

Fall—evening.

An examination of the legal doctrine relating to regulatory practices in the channels of mass communications, i.e., newspapers, motion pictures, and radio-television; analysis of the operational structure of the mass media and the pattern of control exercised by government, private associations, and various community groups; appraisal of the comparative utility of various regulatory techniques for implementing policies affecting these media; special emphasis will be placed on the functions of the Federal Communications Commission.

466 *Regulation of Securities and Securities Markets* (2) M. Cohen

Not offered 1959-60.

A study of state and federal laws governing the offering and distribution of securities to the public by corporate issuers and others, the regulation of securities markets, and the rights and liabilities of purchasers under such statutes. Particular emphasis will be given to statutes administered by the Securities and Exchange Commission.

469 *Research in Patent, Trade-Mark, and Copyright Law* (2) L. Harris

Fall—as arranged; spring—as arranged.

Registration limited to students with at least a B average who have taken Patent Law I and II and related courses including, as a rule, Trade Regulation Seminar. Request in writing, with proposed outline of topic of research, must be submitted to the Dean at least one month prior to registration day. Registration permitted for one semester only; work must be completed within the semester and paper submitted not later than last day of classes.

471 *Research in Public Law* (2) The Staff

Fall—as arranged; spring—as arranged.

Registration limited to students with at least a B average who have

had a seminar or comparable course in field of proposed research. Request in writing, with proposed outline of topic of research, must be submitted to the Dean at least one month prior to registration. Registration permitted for one semester only; work must be completed within the semester and paper submitted not later than the day of classes.

475 *Taxation—Corporate* (2)

Fall—evening.

Case law and 1954 Internal Revenue Code provisions applicable to corporations; analysis of corporate distributions and liquidations; exemptions of stock, reorganizations and mergers; collapsible corporations; organization of corporations, sales of business enterprises; personal holding companies, accumulated earnings tax, and carryover.

Prerequisite: Law 279.

480 *Taxation—Oil and Gas* (2)

Spring—evening.

A study of the case law relating to percentage depletion, sales and transfers of interests in oil and gas properties; legal aspects of mining methods in oil and gas operations; application of partnership and corporation provisions of the 1954 Internal Revenue Code to oil and gas activities. Prerequisite: Law 279.

485 *Taxation Seminar* (2)

Spring—evening.

Selected problems in federal income, estate and gift taxation, involving factual analysis and legal research, and the preparation of memoranda of law, legislative drafting or other appropriate documents. Identical problems or cases will be assigned to small groups for development and disposition. Registration subject to approval of faculty. Prerequisite: Law 274 and 279.

492 *Trade Regulation Seminar* (2)

Spring—evening.

Group study of current problems relating to unfair trade practices and federal antitrust laws.

495 *Urban Redevelopment* (2)

Not offered 1959-60.

Selected problems in urban redevelopment and housing, with emphasis on programs under current federal and state legislation.

MATHEMATICS

James Henry Taylor, Ph.D., *Professor Emeritus of Mathematics in Residence*

Francis Edgar Johnston, Ph.D., *Professor of Mathematics*

Florence Marie Mears, Ph.D., *Professor of Mathematics*

Nels David Nelson, Ph.D., *Professor of Mathematics, Executive Officer*

Isidor Heller, Sc.D., *Professor of Mathematics*

Thomas Phillip George Liverman, Ph.D., *Associate Professor of Mathematics*

Louis William Tordella, Ph.D., *Associate Professorial Lecturer in Mathematics*

Daniel Maccabaeus Dribin, Ph.D., *Associate Professorial Lecturer in Mathematics*

William Arthur Smith, A.M., *Assistant Professor of Mathematics*

Earl Larkin Williams, A.M., *Lecturer in Mathematics*

Joseph Blum, Ph.D., *Lecturer in Mathematics*

Bachelor of Arts or Bachelor of Science with a major in Mathematics (Columbian College—Departmental).—Prerequisite: the Arts and Letters or the Science curriculum, respectively, in the Junior College, see pages 70 and 71.

Required: in addition to the general requirements of Columbian College as stated on pages 85-91, fifteen semester hours of Mathematics of approved second and third-group courses.

Master of Arts or Master of Science in the field of Mathematics (Columbian College).—Prerequisite: a Bachelor of Arts or Bachelor of Science degree, respectively, with a major in Mathematics at this University, or the equivalent.

Required: the general requirements of Columbian College as stated on pages 91-95.

Doctor of Philosophy (Graduate Council).—See page 104.

Bachelor of Science in Engineering with an option in Mathematics (School of Engineering).—For requirements see pages 145-47 and 15.

Bachelor of Arts in Education with a teaching field in Mathematics (School of Education).—Prerequisite: the Education curriculum in the Junior College, pages 72-73.

Required: the Mathematics option, page 176, and the professional courses listed on page 178.

FIRST GROUP*

2 General Mathematics (3)

Spring—evening.

The Staff

For students in the School of Education. A study of the basic concepts of elementary mathematics: mathematical proof, the number sys-

*No first-group course in mathematics is available for college credit if the student's previous training in mathematics meets the prerequisite for a higher numbered course.

tems, number notations, function, direct and indirect measurement, and computation. Prerequisite: two years of high school mathematics or Statistics 53, or the equivalent.

3 College Algebra (3)

Fall—morning and evening; spring—morning and evening; summer 1959.

Exponents and logarithms; linear equations; complex numbers; quadratic equations; introduction to theory of equations; mathematical induction and the binomial theorem; permutations, combinations, and probability; determinants; progressions. Prerequisite: one year each of high school algebra and high school geometry.

6 Plane Trigonometry (3)

Fall—morning and evening; spring—morning and evening; summer 1959.

Prerequisite: two years of high school algebra and one year of high school geometry, or Mathematics 3 (or concurrent registration therefor).

12 Analytic Geometry (3)

Fall—morning and evening; spring—morning and evening; summer 1959.

Prerequisite: Mathematics 3 and 6, or two years of high school algebra, one year of high school geometry, and one-half year of high school trigonometry.

20 Integral Calculus (3)

Fall—morning and evening; summer 1959.

Prerequisite: former Mathematics 19.

29 Calculus I (3)

Fall—morning and evening; spring—morning and evening; summer 1959.

Differentiation and integration of algebraic functions with applications. Prerequisite or concurrent registration: Mathematics 12.

30 Calculus II (3)

Fall—morning and evening; spring—morning and evening.

Differentiation and integration of transcendental functions with applications, solid analytic geometry, multiple integrals. Prerequisite: Mathematics 12 and 29.

31 Calculus III* (3)

Fall—morning and evening; spring—morning and evening.

Infinite series, partial differentiation, multiple integrals, introduction to vector concepts, improper integrals. Prerequisite: Mathematics 30 (or concurrent registration therefor), or Mathematics 20.

* Mathematics 11 (or 20) is prerequisite to all second-group courses.

SECOND GROUP*

- 102 *Fundamental Concepts of Mathematics* (3) Nelson
Fall—evening.
- 103 *Calculus and Differential Equations* (3) The Staff
Fall—morning and evening; summer 1959.
- 111 *Mathematics for Engineers and Physicists I* (3) The Staff
Spring—morning and evening.
Differential equations, vector analysis, introduction to matrix algebra.
Prerequisite: Mathematics 30 and 31.
- 112 *Mathematics for Engineers and Physicists II* (3) The Staff
Fall—morning and evening; spring—morning and evening; summer 1959.
Topics from advanced calculus, partial differential equations, and complex variables. Prerequisite: Mathematics 103, 111, or 132.
- 123 *Theory of Equations* (3) The Staff
Spring—evening.
- 125 *Advanced Algebra* (3) Johnston
Fall—morning.
- 126 *Advanced Analytic Geometry* (3) Taylor
Fall—evening.
- 132 *Differential Equations* (3) The Staff
Spring—evening; summer 1959.
- 134 *Introduction to Boundary Value Problems* (3)
1960-61 and alternate years.
Prerequisite: Mathematics 103, 111, or 132.
- 135 *Projective Geometry* (3)
Not offered 1959-60.
- 139 *Advanced Calculus* (3) Mears
Fall—evening; summer 1959.
- 140 *Introduction to Analysis* (3) Mears
Spring—evening.
Prerequisite: Mathematics 139.

* Mathematics 31 (or 20) is prerequisite to all second group courses.

141 *Introduction to Infinite Series* (3)

1960-61 and alternate years.

167 *Fourier Series and Spherical Harmonics* (3)

Not offered 1959-60.

Prerequisite: Mathematics 103, 111, or 132.

171 *Vector Analysis* (3)

Spring—morning.

THIRD GROUP

202 *Mathematical Logic* (3)

Spring—evening.

220 *Theory of Numbers* (3)

Not offered 1959-60.

237-38 *Theory of Functions of a Complex Variable*
(3-3)

A year course: credit is not given for the first half until the second half is completed.

Academic year—evening.

242 *Infinite Series* (3)

1960-61 and alternate years.

243-44 *Numerical Analysis* (3-3)

Academic year—evening.

Prerequisite: Mathematics 103, 111, or 132.

249 *Ordinary Differential Equations* (3)

Not offered 1959-60.

250 *Integral Equations* (3)

Not offered 1959-60.

251-52 *Theory of Functions of a Real Variable* (3-3)

A year course: credit is not given for the first half until the second half is completed.

1960-61 and alternate years.

255 *Differential Geometry* (3)

Not offered 1959-60.

- 257 *Theory of Groups* (3)
Not offered 1959-60.
- 260-61 *Principles of Applied Mathematics* (3-3) Liverman
A year course: credit is not given for the first half until the second half is completed.
Academic year—evening.
Generalized functions (Schwartz distributions); applications to differential equations; Green's function; Eigenvalue problems; functional analysis foundations of approximation procedures for applied mathematics. Prerequisite: Mathematics 140 or consent of the instructor.
- 265 *Modern Algebra* (3) Heller
Fall—evening.
- 268 *Calculus of Variations* (3)
Not offered 1959-60.
- 270 *Tensor Analysis* (3) Taylor
Fall—evening.
- 272 *Hilbert Space* (3) Heller
Spring—evening.
Prerequisite: Mathematics 265 or consent of the instructor.
- 277 *Partial Differential Equations* (3)
Not offered 1959-60.
- 278 *Introduction to Topology* (3) Heller
1960-61 and alternate years.
- 295-96 *Reading and Research* (3-3) The Staff
Academic year—as arranged.
- 299-300 *Thesis* (3-3) The Staff
Academic year—as arranged; summer 1959.

MECHANICAL ENGINEERING

Benjamin Carpenter Cruickshanks, B.S. in M.E., *Professor Emeritus of Mechanical Engineering in Residence*

Sanford Thompson, Ph.D., *Professorial Lecturer in Mechanical Engineering*

Paul Arthur Crafton, B.M.E., Ph.D., *Associate Professor of Mechanical Engineering*

George Calvin Weaver, M.S., *Associate Professor of Mechanical Engineering*

Albert Christian Murdaugh, B.S., M.S. in Met.E., *Associate Professor of Mechanical Engineering*

Philip Sidney Morgan, Jr., B.S., M.S. in M.E., *Assistant Professor of Mechanical Engineering*

Morrow Harris Moore, Jr., M.S. in M.E., *Assistant Professor of Mechanical Engineering*

Robert William Pinnes, M.M.E., *Lecturer in Mechanical Engineering*

Irving Korobkin, B.M.E., M.S. in M.E., *Lecturer in Mechanical Engineering*

Martin Aaron Garstens, A.M., Sc.D., *Lecturer in Engineering*

Raphael David Cahn, B.M.E., *Lecturer in Mechanical Engineering*

Frank Joseph Powell, M.S., *Lecturer in Mechanical Engineering*

Bachelor of Mechanical Engineering (School of Engineering).—See pages 147 and 149 for statement of requirements.

Master of Science in Engineering (School of Engineering).—See pages 147 and 149 for statement of requirements.

FIRST GROUP

6 Engineering Problems* (2)

Summer 1950.

Simple engineering problems in statics, dynamics, energy, heat and electricity. Training in reasoning, engineering analysis, and application of mathematics to engineering problems. Prerequisite: Mathematical Engineering 5; removal of all entrance deficiencies in science and mathematics.

9 Introduction to Engineering* (3)

Academic year—morning, afternoon, and evening.

Number systems, computation aids, scientific method, problem solving techniques, use of mathematical tables. Emphasis is placed on the development of sound reasoning and study methods.

* This course should be completed before the beginning of the sophomore year.

10 *Graphical Communication* (2) The Staff

Academic year—morning, afternoon, and evening.

Spatial visualization, engineering drawing, schematic diagrams, descriptive geometry. A laboratory course. Laboratory fee, \$10.

SECOND GROUP

100 *Analytical Kinematics* (3) Crafton

Spring—afternoon.

Theoretical study of the motion of constrained and unconstrained rigid bodies. Prerequisite or concurrent registration: Civil Engineering 121, Mathematics 112.

113 *Thermodynamics I* (3) Weaver, Moore

Fall—morning and evening.

Theoretical study of fundamental concepts, equations of state, first and second laws of thermodynamics, entropy, single and two-phase mixtures. Prerequisite: Chemistry 12, Mathematics 31, Physics 16.

114 *Thermodynamics II* (3) Weaver

1959-60 and alternate years: spring—morning; 1960-61 and alternate years: spring—evening.

Theoretical study of vapor cycles, combustion, gas dynamics, equilibrium, multiphase mixtures. Prerequisite: Mechanical Engineering 113. Prerequisite or concurrent registration: Civil Engineering 132, Mechanical Engineering 118.

118 *Heat Transfer* (3) Weaver

Spring—morning and evening.

Heat transfer theory, conduction, convection, radiation, field and potential theory applied to conduction. Prerequisite: Mechanical Engineering 113, Mathematics 112.

120 *Physical Metallurgy* (3) Murdaugh

1959-60 and alternate years: spring—evening; 1960-61 and alternate years: spring—morning.

Physics of metals, crystal and lattice structures, binary and ternary alloys, properties of alloys, nonequilibrium conditions, phase diagrams. Prerequisite: Mathematics 31, Civil Engineering 125. Laboratory fee, \$10.

123 *Advanced Dynamics I* (3) Crafton, Moore

Fall—afternoon.

Shock and vibrations in linear mechanical systems, electromechanical analogies, transient and steady-state analysis. Prerequisite: Mechanical Engineering 100. Prerequisite or concurrent registration: Civil Engineering 157.

124 *Advanced Dynamics II (3)*

Spring—afternoon.

Advanced study of dynamics of continuous mechanical systems. Lagrange's equations, Hamilton's principle, gyrokinematics. Prerequisite: Mechanical Engineering 123.

135-36 *Thermal Power (3-3)*

1959-60 and alternate years: academic year—morning; 1960-61 and alternate years: academic year—evening.

Analysis and design principles governing systems and components of heat-power, gas and vapor turbines, internal combustion engines, pumps, nuclear power systems. Lecture and laboratory. Laboratory fee, \$15 a semester. Prerequisite: Physics 191; Civil Engineering 114, 118. Prerequisite or concurrent registration: Mechanical Engineering 139.

139 *Fluid Machinery (3)*

1959-60 and alternate years: fall—morning; 1960-61 and alternate years: fall—evening.

Positive-displacement machines, hydraulic circuits and servomechanisms; general theory of dynamic machines; velocity diagrams; work transfer; radial, axial, and mixed-flow machines; turbines, compressors and couplings; jet machines. Lecture and laboratory. Laboratory fee, \$10. Prerequisite: Civil Engineering 132, Mechanical Engineering 113. Prerequisite or concurrent registration: Mechanical Engineering 123.

143 *Production Analysis (3)*

1959-60 and alternate years: fall—evening; 1960-61 and alternate years: fall—morning.

Principles of programming, quality control, automation, production analysis. Prerequisite: Mathematics 112.

146 *Dynamics of Compressible Fluids (3)*

1959-60 and alternate years: spring—morning; 1960-61 and alternate years: spring—evening.

Mathematical theory of compressible fluid flow, flow around bodies, airfoil theory, shock-wave theory, thermodynamics of compressible fluids. Prerequisite: Mechanical Engineering 118, Civil Engineering 132. Laboratory fee, \$10.

THIRD GROUP

211 *Thermodynamics (3)*

Fall—evening.

Reversible and irreversible processes, equilibrium, ideal and real gases, Van der Waal's gases, dilute solutions, phase equilibria, electric and magnetic effects, radiation. Introduction to kinetic theory and statistical mechanics.

213 *Heat Transfer* (3)

Crafton

Spring—evening.

Physical and mathematical concepts of heat transfer phenomena under steady and unsteady conditions, including Stefan-Boltzmann and Planck laws for radiation. Fourier heat equation for conduction, dimensional analysis, and boundary layer theory for convection.

215 *Gas Dynamics* (3)

Spring—evening.

Theory of gas dynamics including: combustion, shock phenomena, dynamics of flow, and heat transfer for high temperature gases.

233 *Supersonic Flow and Shock Waves* (3)

Not offered 1959-60.

Advanced theory of supersonic fluid flow. Shock phenomena, spherical waves.

ENGINEERING ADMINISTRATION

- Jack Edward Walters, M.S. in M.E., Ph.D., *Professor of Engineering Administration*
 Nathaniel Stewart, M.S., Ed.D., *Professorial Lecturer in Engineering Administration*
 Frank Miller Reynolds, LL.M., B.S., *Professorial Lecturer in Engineering Administration*
 Robert James Wilson, A.M., Ed.D., *Professorial Lecturer in Engineering Administration*
 Franklin Porter Hall, Ph.D., *Professorial Lecturer in Engineering Administration*
 Keith Cyril Harder, Ph.D., *Professorial Lecturer in Engineering Administration*
 Kenneth Seymour Colmen, B.A.E., Ph.D., *Professorial Lecturer in Engineering Administration*
 Frederick Charles Dyer, M.B.A., *Professorial Lecturer in Engineering Administration*
 Robert Irving Sarbacher, Sc.D., E.E., *Professorial Lecturer in Engineering Administration*
 Harold Joseph Barnett, Ph.D., *Professorial Lecturer in Engineering Administration*
 Ira Hubert Cisin, Ph.D., *Professorial Lecturer in Engineering Administration*
 Laurence Heilprin, Ph.D., *Professorial Lecturer in Engineering Administration*

John Kaye, M.S. in M.E., *Associate Professor of Engineering Administration*

Boone Doudy Tillett, LL.B., M.S., Sc.D., *Associate Professor of Engineering Administration*

James Russell Miles, Sr., A.B., M.E.A., *Lecturer in Engineering Administration*

Master of Engineering Administration.—See pages 150-52, 154-55.

The School of Engineering offers the following courses primarily for candidates for the degree of Master of Engineering Administration. Only courses listed in this program are offered by the Departments of Accounting, Business and Public Administration, Geography, Psychology, and Statistics.

SECOND GROUP

191 *Engineering Law** (3)

Fall—evening; summer 1959.

The influence of contract, property, and tort law upon engineering activities. Legal principles relating to the organization and management of engineering companies and governmental departments. Procedures of interest to engineers. Topics considered include contracts, agency, partnership, corporations, liens, and expert testimony.

THIRD GROUP

201 *Engineering Administration I* (3)

Fall—evening; spring—evening; summer 1959.

Application of scientific method to the administrative processes of (1) planning and (2) organizing; including development of objectives, factors in planning, basics of organization, stages of organization, growth, special problems of organization in an engineering or scientific enterprise, and management development.

202 *Engineering Administration II* (3)

Fall—evening; spring—evening; summer 1959.

Continuation of *Engineering Administration 201*. Application of scientific method to the administrative processes of (3) managing, directing and (4) evaluation and control. Study of delegation, centralization, personnel relations, systems engineering, automation, financial analysis, budgeting, and administrative audits.

203 *Engineer and Society* (3)

Spring—evening.

Role of the engineer and the engineering profession in society; the influence of humanities in engineering and scientific activities; and the

* An undergraduate course which may be taken for graduate credit with approval of Committee on Graduate Studies.

relationship of engineering to the community, state, nation, and the world. Case studies by the student are required.

- 206 *Professional Management Development and Personnel Relations* (3) Walters

1960-61: spring-evening.

The meaning, principles, and practices of management development and personnel relations; collective bargaining; principles and practices of personnel administration.

- 211 *Communication of Ideas* (3)

Fall-evening.

The principles and practices of factual technical communication; reports, administrative memoranda, and articles for publication; the selection of content and preparation of material for readers of different orientations and capabilities.

- 251 *Management of Research and Development* (3)

Fall-evening.

Management problems involved in the administration of research and development programs; exploration of techniques in programming; selection of organizations for research, maintenance, control, and evaluation of projects. Prerequisite: Engineering Administration 202 or permission of instructor.

- 252 *Production and Maintenance Management* (3) Tillett

Fall-evening; spring-evening.

Managerial implications of automation and systems engineering in production. Study of skills and abilities essential to industrial management, including maintenance of equipment and real property. Prerequisite: Engineering Administration 202 or permission of instructor.

- 261 *Economic Analysis in Engineering Planning* (3)

Fall-evening; spring-evening.

Application of economic principles to engineering administration: inputs, outputs, investment, and prices. Studies are made of the methods of analyzing economic factors in evaluating alternate courses of administrative action in government and industry.

- 261 *Quantitative Techniques of Engineering Administration* (3)

Not offered 1959-60.

Application of the various quantitative techniques, mathematical, statistical, and other management sciences' techniques to the analysis of engineering administration and the solution of administrative problems by the use of models, theories, and measurements.

271 *Operations Research (3)*

Fall—evening; spring—evening.

Background and application of operations research; history, characteristics, capabilities, administrative considerations, cases, methods and techniques, including construction of conceptual and mathematical models.

272 *Problems in Operations Research (3)*

Spring—evening.

Illustrations of the application of operations research by study of case histories; examples of the formulation and preliminary order-of-magnitude case; examples of broader scope. Prerequisite: Engineering Administration 271 or permission of the instructor.

273-74 *Techniques of Operations Research (3-3)*

Academic year—evening.

Theory and application of techniques used in operations research including order-of-magnitude estimation, probability and mathematical statistics, symbolic logic, inequality-constrained stationary-value problems, dynamics of populations, Monte Carlo simulation, strategic planning, and error and sensitivity analysis. Prerequisite: Engineering Administration 271 or permission of the instructor.

290 *Problems in Engineering Administration (3)*

Fall—evening; spring—evening.

Application of the scientific method to engineering administrative problems; the selection and development of the Master's Problem.

291 *Master's Problem (3)*

Fall—evening; spring—evening; summer 1959.

Experimentation and proof of the Master's Problem solution. Preparation for presentation of the problem in written form.

295 *Applied Research in Engineering Administration (arr.)*

Fall—as arranged; spring—as arranged.

Application of established principles to new engineering administrative situations; the development of new knowledge of administration.

296 *Research in Engineering Administration (arr.)*

Fall—as arranged; spring—as arranged.

Creative thinking in engineering administration, initiation of theories and principles, development of new hypotheses, experimentation, proof of theories and hypotheses.

MEDICINE

- Thomas McPherson Brown, A.B., M.D., *Eugene Meyer Professor of Medicine, Executive Officer*
- Monroe James Romansky, A.B., M.D., *Professor of Medicine*
- Louis Katz Alpert, B.S., M.D., *Professor of Medicine*
- Charles Robert Lee Halley, A.B., M.D., *Clinical Professor of Medicine*
- Clayton Bernard Ethridge, M.D., *Clinical Professor of Medicine*
- John McCallum Evans, A.B., M.D., *Associate Professor of Medicine*
- Alvin Edward Parrish, M.D., *Associate Professor of Medicine*
- Clarence Richard Hartman, A.B., M.D., *Associate Professor of Medicine*
- Pearl Holly, M.S., M.D., *Associate Clinical Professor of Medicine*
- James Joseph Feffer, A.B., M.D., *Associate Clinical Professor of Medicine*
- Andrew Gabriel Prandoni, B.S., M.D., *Associate Clinical Professor of Medicine*
- Halla Brown, M.D., *Associate Clinical Professor of Medicine*
- Stewart William Bush, B.S., M.D., *Assistant Professor of Medicine*
- William Robert Felts, Jr., B.S., M.D., *Assistant Professor of Medicine*
- George Archibald Kelsner, Jr., B.S., M.D., *Assistant Professor of Medicine*
- John Alton Reed, A.B., M.D., *Assistant Clinical Professor of Medicine*
- Theodore Judson Abernethy, B.S., M.D., *Assistant Clinical Professor of Medicine*
- Roy Hertz, Ph.D., M.D., *Assistant Clinical Professor of Medicine*
- Benjamin Manchester, M.D., *Assistant Clinical Professor of Medicine*
- Ludwig George Lederer, M.D., Ph.D., *Assistant Clinical Professor of Medicine*
- John Eldrid Smith, A.B., M.D., *Assistant Clinical Professor of Medicine*
- John Watkins Trenis, A.B., M.D., *Assistant Clinical Professor of Medicine*
- Lawrence Elias Putnam, A.B., M.D., *Assistant Clinical Professor of Medicine*
- Roy Ernest Albert, A.B., M.D., *Assistant Clinical Professor of Medicine*
- Elizabeth Harman Hill, M.D., *Assistant Clinical Professor of Medicine*
- Joseph Edward Rall, M.D., Ph.D., *Assistant Clinical Professor of Medicine*
- Benjamin Hardy Sullivan, Jr., A.B., M.D., *Assistant Clinical Professor of Medicine*
- John Atkinson Owen, Jr., B.S., M.D., *Assistant Clinical Professor of Medicine*

- Lawrence Jay Thomas, B.S., M.D., *Assistant Clinical Professor of Medicine*
- Myer Harold Stolar, B.S., M.D., *Assistant Clinical Professor of Medicine*
- Alfred Brigulio, M.D., *Assistant Clinical Professor of Medicine*
- Thomas Stone Sappington, A.B., M.D., *Assistant Clinical Professor of Medicine*
- Samuel Jacob Nathan Sugar, Phar.G., M.D., *Assistant Clinical Professor of Medicine*
- Joseph Ney, B.S., M.D., *Assistant Clinical Professor of Medicine*
- Joseph Beinstein, A.B., M.D., *Assistant Clinical Professor of Medicine*
- Frank Solomon Bacon, B.S., M.D., *Assistant Clinical Professor of Medicine*
- Henry Dunlop Ecker, B.S., M.D., *Assistant Clinical Professor of Medicine*
- Jack Jacob Rheingold, A.B., M.D., *Assistant Clinical Professor of Medicine*
- Irene Gorski Tamagna, M.D., *Assistant Clinical Professor of Medicine*
- John Wilmer Latimer, Jr., M.D., *Assistant Clinical Professor of Medicine*
- Charles Wilson Jones, A.B., M.D., *Assistant Clinical Professor of Medicine*
- Charles Waters Thompson, M.D., *Assistant Clinical Professor of Medicine*
- Eugene Solomen Gladsden, B.S., M.D., *Assistant Clinical Professor of Medicine*
- Maurice Mensh, M.D., *Assistant Clinical Professor of Medicine*
- Arthur Rosenbaum, B.S., M.D., *Assistant Clinical Professor of Medicine*
- Francis James Murray, B.S., M.D., *Assistant Clinical Professor of Medicine*
- Edwin Pearson Parker III, B.S., M.D., *Assistant Clinical Professor of Medicine*
- Morris Hirsh Rosenberg, A.B., M.D., *Assistant Clinical Professor of Medicine*
- John William DuChez, M.D., *Assistant Clinical Professor of Medicine*
- William Otis Bailey, Jr., M.D., *Assistant Clinical Professor of Medicine*
- Milton Gusack, A.B., M.D., *Assistant Clinical Professor of Medicine*
- Jack Kleh, A.B., M.D., *Assistant Clinical Professor of Medicine*
- Maurice Protas, A.B., M.D., *Associate in Medicine*
- Charles William Ordman, A.B., M.D., *Associate in Medicine*
- Richard Bernard Castell, A.B., M.D., *Associate in Medicine*
- Sam Thompson Gibson, B.S., M.D., *Associate in Medicine*
- Ralph Bretney Miller, A.B., M.D., *Associate in Medicine*
- Ernest Cotlove, B.S., M.D., *Associate in Medicine*
- Thomas James Kennedy, Jr., B.S., M.D., *Associate in Medicine*

- Jack Orloff, M.D., *Associate in Medicine*
 John Bayne Marbury, M.D., *Associate in Medicine*
 Louis Ross, M.D., *Associate in Medicine*
 Frederic Dunbar Chapman, A.B., M.D., C.M., *Associate in Medicine*
 Luther Henry Snyder, A.B., M.D., *Associate in Medicine*
 Robert George Taylor, M.D., *Associate in Medicine*
 James Walling Long, M.D., *Associate in Medicine*
 Irvin Kerlan, B.S., M.D., C.P.H., *Associate in Medicine*
 Virginia Patterson Beelar, A.B., M.D., *Associate in Medicine*
 Stanley William Kirstein, A.B., M.D., *Associate in Medicine*
 James Francis Ambury, B.S., M.D., *Associate in Medicine*
 Robert Norwood Coale, B.S., M.D., *Associate in Medicine*
 Israel Kessler, M.S., M.D., *Associate in Medicine*
 Warren Daniel Brill, B.S., M.D., *Associate in Medicine*
 Marvin Fuchs, B.S., M.D., *Associate in Medicine*
 William Jack Weaver, Jr., A.B., M.D., *Associate in Medicine*
 Ruth Boshwitz Benedict, A.B., M.D., *Associate in Medicine*
 Harold Martin Silver, A.B., M.D., *Associate in Medicine*
 James Theodore Burns, M.D., *Associate in Medicine*
 Thomas Lees Hartman, A.M., M.D., *Associate in Medicine*
 Boris Rabkin, A.B., M.D., *Associate in Medicine*
 Morton Harold Rose, M.D., *Associate in Medicine*
 Cyril Augustus Schulman, B.S., M.D., *Associate in Medicine*
 Louis Aleck Craig, Jr., A.B., M.D., *Associate in Medicine*
 Abraham Wolfe Danish, A.B., M.D., *Associate in Medicine*
 Adolph Friedman, A.B., M.D., *Associate in Medicine*
 Alvin Randolph Sweeney, Jr., A.B., M.D., *Associate in Medicine*
 *Albert Sjoerdsma, Ph.D., M.D., *Associate in Medicine*
 Alvin Seltzer, B.S., M.D., *Associate in Medicine*
 Samuel Dennis Loube, A.B., M.D., *Associate in Medicine*
 Alfred Baer, A.B., M.D., *Associate in Medicine*
 Herbert Abramson, A.M., M.D., *Associate in Medicine*
 Henry Krause Beye, A.B., M.P.H., M.D., *Associate in Medicine*
 James Hutcheon Pert, A.B., M.D., *Associate in Medicine*
 John Walsh, B.S., M.D., *Associate in Medicine*
 Charles Edward Law, M.D., *Associate in Medicine*
 Edward Luke Rea, A.B., M.D., *Associate in Medicine*
 James Packard Mann, M.D., *Associate in Medicine*
 Conrad Gossels, M.D., *Associate in Medicine*
 James Eliot Chapman, M.D., *Associate in Medicine*
 Marshall Hannis Jacobson, A.B., M.D., *Associate in Medicine*
 Gottfried Karl Duschak, M.D., *Associate in Medicine*

* On leave of absence 1959-60

- Howard Otis Mott, A.B., M.D., *Associate in Medicine*
 Irene I-Lien Hsu Siu, B.S., M.D., *Associate in Medicine*
 Bertle Nelson, A.B., M.D., *Associate in Medicine*
 William Kirkman Billingsley, Jr., A.B., M.D., *Associate in Medicine*
 Howard Erwin Ticktin, A.B., M.D., *Associate in Medicine*
 Richard Crasman Fowler, B.S., M.D., *Instructor in Medicine*
 Emil Herbert Bauersfeld, A.B., M.D., *Clinical Instructor in Medicine*
 Harry Clark Bates, B.S., M.D., *Clinical Instructor in Medicine*
 Jeanne Cecile Bateman, A.B., M.D., *Clinical Instructor in Medicine*
 George Sharpe, A.B., M.D., *Clinical Instructor in Medicine*
 William Lewis, M.D., *Clinical Instructor in Medicine*
 Maurice Arthur Sislen, A.B., M.D., *Clinical Instructor in Medicine*
 William Holmes Crosby, A.B., M.D., *Clinical Instructor in Medicine*
 Joseph Hicks Watson, B.S., M.D., *Clinical Instructor in Medicine*
 Charles Joseph Savarese, Jr., A.B., M.D., *Clinical Instructor in Medicine*
 Bernard Robert Cooperman, A.B., M.D., *Clinical Instructor in Medicine*
 Norman Hartley Rubenstein, M.D., *Clinical Instructor in Medicine*
 Max Gimble Sherer, M.S., M.D., *Clinical Instructor in Medicine*
 Donald Morgan Watkin, A.B., M.D., *Clinical Instructor in Medicine*
 Edward Adelson, B.S., M.D., *Clinical Instructor in Medicine*
 Gerald John Fisher, A.B., M.D., *Clinical Instructor in Medicine*
 William Leete Stone, A.B., M.D., *Clinical Instructor in Medicine*
 Jacob Robbins, A.B., M.D., *Clinical Instructor in Medicine*
 Bernard Howard Ostrow, A.B., M.D., *Clinical Instructor in Medicine*
 James Charles Mandes, A.B., M.D., *Clinical Instructor in Medicine*
 Charles David Cooper, A.B., M.D., *Clinical Instructor in Medicine*
 Robert Reid Belton, A.B., M.D., *Clinical Instructor in Medicine*
 Robert Lynwood Howard, A.B., M.D., *Clinical Instructor in Medicine*
 Walter Kurland, B.S., M.D., *Clinical Instructor in Medicine*
 Edward Joseph Leonard, M.D., *Clinical Instructor in Medicine*
 Paul Wesley Yost, B.S., M.D., *Clinical Instructor in Medicine*
 Robert Sirkosky Gordon, Jr., A.B., M.D., *Clinical Instructor in Medicine*
 Donald Sharp Fredrickson, B.S., M.D., *Clinical Instructor in Medicine*
 Sam Chapman Pascoe, A.B., M.D., *Clinical Instructor in Medicine*
 Wilfred Russell Ehrmantraut, B.S., M.D., *Clinical Instructor in Medicine*
 Jack Crowell, B.S., M.D., *Clinical Instructor in Medicine*
 David Stanley Davis, A.B., M.D., *Clinical Instructor in Medicine*
 Herschel Elroy Richardson, A.B., M.D., *Clinical Instructor in Medicine*
 John Whitson Roark, B.S., M.D., *Clinical Instructor in Medicine*
 Jerome Harold Epstein, A.M., M.D., *Clinical Instructor in Medicine*
 George Cumming Buchanan, A.B., M.D., *Clinical Instructor in Medicine*
 Montague Lane, M.D., M.S., *Clinical Instructor in Medicine*

Forest Klaire Harris II, B.S., M.D., *Clinical Instructor in Medicine*
 Audrey Connor, A.B., M.D., *Clinical Instructor in Medicine*
 Harold Irwin Passes, Med.B., B. Surg., *Clinical Instructor in Medicine*
 Charles William Foulke, A.B., M.D., *Clinical Instructor in Medicine*
 Margaret Katherina McCabe, M.D., *Clinical Instructor in Medicine*
 Harold Heacock Orvis, B.S., M.D., *Clinical Instructor in Medicine*
 Arnold Albert Lear, M.D., *Clinical Instructor in Medicine*

SPECIAL LECTURERS

Albert David Kistin, A.M., M.D., *Chief of Medicine, Beckley Memorial Hospital, Beckley, West Virginia; Cardiology*
 Walter Kendall Myers, B.S., M.D., *Senior Attending Physician, Washington Hospital Center; Consultant in Internal Medicine, Glenn Dale Hospital and Washington Home for Incurables; Internal Medicine*
 Sol Katz, B.S., M.D., *Chief, Pulmonary Disease Service, D. C. General Hospital; Pulmonary Diseases*
 Joseph Francis Fazekas, M.D., *Chief of Staff, D. C. General Hospital; Cardiovascular Diseases*
 Robert William Berliner, B.S., M.D., *Chief, Section on Kidney and Electrolyte Metabolism, National Heart Institute, National Institutes of Health; Renal Diseases*
 Henry Field, Jr., B.S., M.D., *Chief, Medical Service, Veterans Administration Center, Martinsburg, W. Va.; Internal Medicine*
 Thomas Hodge McGavack, A.B., M.D., *Chief, Intermediate Service, Veterans Administration Center, Martinsburg, W. Va.; Metabolic Diseases*
 Peter Diacoumis Comanduras, B.S., M.D., M.S. in Med., *Secretary General, Medical International Cooperation; Gastroenterology*
 Walter Lewis Nalls, M.D., *Consultant, Veterans Administration Center, Martinsburg, W. Va.; Pulmonary Diseases*

106 *Living Anatomy*

The Staff

Spring—1 hour a week.

An introduction to physical diagnosis, with special emphasis on topographical anatomy.

236 *Clinical Microscopy*

The Staff

Spring—3 hours a week.

Conferences and studies in the clinical application of laboratory examinations of blood, body fluids, exudates, excreta.

- 242 Physical Diagnosis** The Staff
 Spring—6 hours a week.
 Covers not only theoretical but practical application of principles of physical diagnosis as related to examination of patients.
- 243-44 Introduction to Medicine** The Staff
 Academic year—2 hours a week.
 Lectures covering the principles of internal medicine preparatory to clinical studies and training in the inpatient and outpatient services.
- 325-26 Clinical Clerkship** The Staff
 Eight weeks as arranged during academic year.
 Training with bed patients under individual instruction designed to develop ability in examination of patients and case taking as well as practice in clinical microscopy. D. C. General Hospital.
- 327 Clinical Pathological Conferences I** The Staff
 Fall—1 hour a week.
 Conferences are held at the School of Medicine. Case histories are presented and discussed by the students and members of the Staff. Clinical, laboratory, and necropsy findings are compared.
- 339-40 Therapeutic Conferences I** Staff of Medicine and Pharmacology
 Academic year—1 hour a week.
 Conferences designed to emphasize the application of pharmacological principles to the problems of clinical medicine. University Hospital.
- 349-50 Medical Conferences** The Staff
 Academic year—2 hours a week.
 D. C. General Hospital.
- 421-22 Outpatient Clinics** The Staff
 Six weeks as arranged during academic year.
 Individual case studies under personal supervision of the Staff. Daily clinics on current medical problems and seminars stressing physiological aspects of diseases. Individual examinations and instruction in medical specialties. University Hospital.
- 423-24 Clinical Clerkship** The Staff
 Six weeks as arranged during academic year.
 University, Mt. Alto, and D. C. General hospitals.

427-28 *Clinical Pathological Conferences II*

The Staff

Academic year—1 hour a week.

Continuation of Medicine 327.

429-30 *Clinical Pathological Conferences III*

The Staff

Academic year—1 hour a week.

Conferences are held at the University Hospital. Attendance is required of students during their medical clerkships there.

NEUROLOGY AND NEUROLOGICAL SURGERY

James Winston Watts, B.S., M.D., *Professor of Neurological Surgery*
Executive Officer

Harold Stevens, Ph.D., M.D., *Professor of Neurology*

Seymour Solomon Kety, A.B., M.D., *Professorial Lecturer in Neurology*

Hyman David Shapiro, M.D., *Associate Clinical Professor of Neurology*

Robert Henry Groh, B.S., M.D., *Associate Clinical Professor of Neurology*

Jonathan Marshall Williams, M.D., *Associate Clinical Professor of Neurological Surgery*

James Peter Murphy, B.S., M.D., *Assistant Clinical Professor of Neurological Surgery*

Hugo Victor Rizzoli, A.B., M.D., *Assistant Clinical Professor of Neurological Surgery*

Anatole Stephen Dekaban, M.D., Ph.D., *Assistant Clinical Professor of Neurology*

Paul Chodoff, A.B., M.D., *Assistant Clinical Professor of Neurology*

George Davis Weickhardt, M.D., *Associate in Neurology*

Harvey Ammerman, B.S., M.D., *Associate in Neurological Surgery*

George Joseph Hayes, B.S., M.D., *Associate in Neurological Surgery*

Cosimo Ajmone Marsan, M.D., *Associate in Neurology*

Garrett Michael Swain, M.D., *Clinical Instructor in Neurological Surgery*

Marvin Curtis Korengold, D.D.S., B.S., M.D., *Clinical Instructor in Neurology*

John Thomas Lord, A.B., M.D., C.M., *Clinical Instructor in Neurological Surgery*

Delora Fowler Mott, M.D., *Clinical Instructor in Neurology*

Norman Harold Horwitz, A.B., M.D., *Clinical Instructor in Neurological Surgery*

Zack Witten Sanders, A.B., M.D., *Clinical Instructor in Neurology*

Ntinos Myrianthopoulos, Ph.D., *Clinical Instructor in Neurology*

Stevens, Williams

249 *Neurology: Basic*

Fall—1 hour a week.

Methods used to study the form and function of the nervous system.
 Lectures and laboratory demonstrations.

Stevens, Shapiro

250 *Neurology*

Spring—1 hour a week.

Introductory lectures on clinical neurology with specimens, lantern slides, and motion pictures.

331 *Neurology and Neurological Surgery* Watts, Stevens

Fall—1 hour a week.

Clinical lectures and demonstrations.

333-34 *Neurology and Neurological Surgery, Clinical Clerkship* Stevens, Williams, Ammerman

In conjunction with Neurology 335-36. Two weeks in rotation as arranged during academic year.

Instruction in history, physical examination, ordinary clinical procedures. Attendance at neurosurgical operations. Six students in rotation. D. C. General Hospital.

335-36 *Neurosurgical Conferences* Watts and Staff

Clinical conferences weekly. Six students in rotation. D. C. General Hospital.

431-32 *Neurology and Neurological Surgery Clinic* Shapiro, Rizzoli

Two hours a week for three weeks in rotation as arranged during academic year.

Neurological outpatient clinic. Consultation of staff on ambulatory cases, demonstration of diagnostic procedures, disposition of neuropsychiatric cases, ward rounds. Six students in rotation. University Hospital.

433-34 *Clinical Neurology* Groh and Sanders

Two hours a week for three weeks in rotation as arranged during academic year.

Neurological inpatient examinations and demonstrations. Six students in rotation. St. Elizabeths Hospital.

435-36 *Neurological Surgery (elective)* The Staff

Academic year—bimonthly.

Lectures and motion picture demonstration of neurosurgical problems.

OBSTETRICS AND GYNECOLOGY

- John Parks, M.S., M.D., *Professor of Obstetrics and Gynecology*
 Robert Henry Barter, B.S., M.D., *Professor of Obstetrics and Gynecology, Executive Officer*
 Henry Lauran Darner, A.B., M.D., *Clinical Professor of Obstetrics and Gynecology*
 George Nordlinger, A.B., M.D., *Clinical Professor of Obstetrics and Gynecology*
 Samuel Mayer Dodek, A.M., M.D., *Associate Clinical Professor of Obstetrics and Gynecology*
 James Glover Sites, M.D., *Assistant Professor of Obstetrics and Gynecology*
 William Prentiss McKelway, A.B., M.D., *Assistant Professor of Obstetrics and Gynecology*
 Jeremiah Keith Cromer, M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
 James Albert Dusbabek, M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
 Clarence Kendall Fraser, Ph.B., M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
 Caroline Jackson, A.M., M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
 Barton Winters Richwine, M.D., *Associate in Obstetrics and Gynecology*
 Floyd Sterling Rogers, B.S., M.D., *Associate in Obstetrics and Gynecology*
 Rufus Martin Roll, A.B., M.D., *Associate in Obstetrics and Gynecology*
 William Thurston Lady, M.D., *Associate in Obstetrics and Gynecology*
 Jed Williams Pearson, Jr., A.B., M.D., *Associate in Obstetrics and Gynecology*
 Thomas Miles Leonard, Ph.B., M.D., *Associate in Obstetrics and Gynecology*
 Shirley Sue Martin, A.B., M.D., *Associate in Obstetrics and Gynecology*
 Neel Jack Price, B.S., M.D., *Associate in Obstetrics and Gynecology*
 Thomas Ashton Wilson, A.B., M.D., *Associate in Obstetrics and Gynecology*
 Julius Robert Epstein, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Morton Selwyn Kaufman, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Samuel Hazen Shea, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*

- Albert Seymour Bright, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Roland Essig Bieren, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Alexander LeSueur Russell, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Marvin Peace Footer, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Donald Walters, B.S., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Joseph Marshall Friedman, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Leon McNeely Liverett, B.S., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 William Hurlbert Cooper, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Peter Soyster, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Howard Pettit Treichler, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 James Christopher Walsh, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*

254 *Introduction to Obstetrics and Gynecology*

Dodek, Fraser

Spring—1 hour a week.

Lectures and demonstrations on the development and physiology of the female reproductive system and the management of normal pregnancy.

301-2 *Manikin Demonstrations*

Footer, Friedman

One hour a week for eight weeks in rotation as arranged during academic year.

The mechanism of labor and various types of operative delivery demonstrated to sections of the junior class. D. C. General Hospital.

337-38 *Obstetrics and Gynecology*

The Staff

Academic year—2 hours a week.

Lectures and demonstrations on the principles of obstetrics and gynecology.

351-52 *Clinical Clerkship*

The Staff

Four weeks during academic year as arranged.

Clerkship with patients, including ward rounds, operating room demonstrations, and weekly clinic. D. C. General Hospital.

439-40 Clinic in Obstetrics and Gynecology

Barter, Sites McKelway

Two hours a week for eight weeks in rotation as arranged during academic year.

Student presentation and discussion of patient problems. Demonstration of equipment used in obstetric and gynecologic practice.

The Staff

441-42 Clinical Obstetrics

Academic year—as arranged.

Students participate in prenatal and postnatal clinic care, observe the course of labor and deliver patients under supervision, observe and participate in the gynecological clinics and operating rooms of the University and D. C. General hospitals, attend bi-weekly departmental conferences and daily ward rounds in the University and D. C. General hospitals.

The Staff

443-44 Clinical Gynecology

Eight weeks in rotation as arranged during academic year.

Students observe and participate in the gynecological clinics and operating rooms of the University and D. C. General hospitals.

OPHTHALMOLOGY

Ronald Atmore Cox, A.B., M.D., *Professor of Ophthalmology, Executive Officer*

Ernest Alfred Watson Sheppard, M.D., C.M., *Clinical Professor of Ophthalmology*

Richard Wallace Wilkinson, A.B., M.D., M.S. in Med., *Assistant Clinical Professor of Ophthalmology*

Walter Joseph Romejko, B.S., M.D., *Associate in Ophthalmology*

William Paxson Chalfant, Jr., M.D., *Associate in Ophthalmology*

William Joseph Graham Davis, A.B., M.D., *Associate in Ophthalmology*

Robert Edward duPrey, B.S., M.D., *Associate in Ophthalmology*

Robert Day, A.B., M.D., *Associate in Ophthalmology*

Melvin Gustavus Alper, A.B., M.D., *Associate in Ophthalmology*

John Henry Gilligan, M.D., *Clinical Instructor in Ophthalmology*

John Lodge, A.B., M.D., *Clinical Instructor in Ophthalmology*

William Bainbridge Glew, M.D., M.S., *Clinical Instructor in Ophthalmology*

352 Ophthalmology

The Staff

Spring—one hour a week for sixteen weeks as arranged.

Lecture course presenting aspects of all the principles of ophthalmology.

447-48 Clinic

The Staff

Academic year—as arranged.

Each student is given individual instruction in ophthalmological diagnosis.

OTOLARYNGOLOGY

James Jerry McFarland, Jr., B.S., M.D., *Associate Clinical Professor of Otolaryngology, Executive Officer*

Catharine Birch, A.B., M.D., *Assistant Clinical Professor of Otolaryngology*

Jack Louis Levine, M.D., *Assistant Clinical Professor of Otolaryngology*

Morris Edward Krueff, B.S., M.D., *Associate in Otolaryngology*

Willard Beecher Walters, B.S., M.D., *Associate in Otolaryngology*

Russel Smith Page, Jr., A.B., M.D., *Associate in Otolaryngology*

Joseph Aziz Sabri, A.B., M.D., *Associate in Otolaryngology*

William MacLohon Tribble, A.B., M.D., *Associate in Otolaryngology*

351 *Otolaryngology*

Spring—1 hour a week for fourteen weeks.

Lectures and demonstrations on anatomy, physiology, and diseases of the ear, nose, and throat.

354 *Bronchoscopy*

Spring—1 hour a week for two weeks.

A series of lectures on the fundamental principles and the use of instruments, including both the bronchoscope and esophagoscope.

355-56 *Clinic*

One and one-half hours a week in rotation as arranged during academic year.

Practical clinical instruction in the diagnosis and treatment of diseases of the ear, nose, and throat. D. C. General Hospital.

PATHOLOGY

Thomas Martin Peery, A.B., M.D., *Professor of Pathology, Executive Officer*
 Daniel Leigh Weiss, A.B., M.D., *Clinical Professor of Pathology*
 Frank Nelson Miller, Jr., B.S., M.D., *Associate Professor of Pathology*
 William Newman, A.B., M.D., *Associate Professor of Pathology*
 William Laverne Marsh, B.S., M.D., *Assistant Professor of Pathology*
 Lois Irene Platt, A.B., M.D., *Associate in Pathology*

SPECIAL STAFF FOR DEMONSTRATIONS

John Stewart Howe, A.B., M.D., *Associate Clinical Professor of Pathology*
 Erving Francis Geever, M.D., Ph.D., *Assistant Clinical Professor of Pathology*
 Raymond Georges Gottschalk, B.S., M.D., *Assistant Clinical Professor of Pathology*
 Richard Emery Palmer, A.B., M.D., *Assistant Clinical Professor of Pathology*
 Lorenz Eugene Zimmerman, A.B., M.D., *Associate in Pathology*
 William Francis Enos, A.B., M.D., *Associate in Pathology*
 Lester Walter Fix, M.D., *Associate in Pathology*
 Charles Barrie Cook, B.S., M.D., *Clinical Instructor in Pathology*
 Frederick William Shillinger, B.S., M.D., *Clinical Instructor in Pathology*
 Charles Phelps Barnett, M.D., *Clinical Instructor in Pathology*

SPECIAL LECTURERS

Elson Bowman Helwig, B.S., M.D., *Chief, Pathology Division, Armed Forces Institute of Pathology*
 Lent Clifton Johnson, B.S., M.D., *Pathologist, Armed Forces Institute of Pathology*

Bachelor of Science in Medical Technology (Columbia College—Departmental).—Prerequisite: the Medical Technology curriculum in the Junior College, see page 72, including Chemistry 11-12, Zoology 1-2, and Bacteriology 112.
 Required: the general requirements of Columbia College as stated on pages 85-91, including Chemistry 21 and 22, and the following second-group courses offered in the University Hospital: Pathology 115-16, 117-18, and 119.
 Admission to the Medical Technology Course does not assure admission to the Hospital program. (See "Medical Technology Course", pages 120-21.)

115-16 *Introduction to Medical Science* (1-1) Marsh and Staff

Academic year—1 hour a week.

For students in medical technology at the University Hospital. These lectures, based upon physiology, pathology and medicine, provide a background for the interpretation of laboratory data.

117-18 *Principles in Medical Technology* (4-4) Marsh and Staff

Academic year—4 hours a week.

For students in medical technology at the University Hospital. Theories, principles, and sources of error, of the methods used in clinical chemistry, clinical bacteriology, serology, hematology, and clinical microscopy.

119 *Medical Technology Laboratory* (20) Marsh and Staff

30 hours a week for 50 weeks.

Practice and experience by rotation through the various divisions of the Pathology laboratories of the University Hospital, as follows: hematology and urinalysis, 12 weeks; chemistry, 12 weeks; bacteriology and parasitology, 10 weeks; blood bank, 8 weeks; serology, 4 weeks; tissue pathology, 4 weeks.

259-60 *Pathology* Peery, Miller

Fall—9 hours a week; spring—3 hours a week.

General pathology of inflammations, degenerations, malformations, and neoplasms. Special pathology of the organs and specific diseases. The laboratory work consists of the gross and microscopic study of diseased tissue. Special emphasis is placed on the interrelationship of the various pathologic changes and their correlation with symptoms and physical signs.

261-62 *Necropsy* The Staff

Academic year—as arranged.

Students are required to attend and assist in the performance of necropsies at the University Hospital.

263-64 *Demonstrations in Pathology* Special Staff

Academic year—1 hour a week.

Gross specimens from several hospitals are demonstrated and discussed.

267-68 *Seminars in Pathology* Special Lecturers

Academic year—as arranged.

Advanced lectures are presented as arranged on special topics in pathology.

270 *Forensic Pathology and Medical Jurisprudence* Miller

Spring—1 hour a week.

Forensic pathology, toxicology, chemistry, and immunology. The legal and ethical rights and responsibilities of physicians. Legal problems in medicine.

323-24 *Surgical Pathology I* Weiss

Academic year—1 hour a week.

Weekly conferences are held with the student group assigned to the surgical clerkship, reviewing current surgical specimens.

327 *Clinical Pathological Conferences I* The Staff

Fall—1 hour a week.

Conferences are held at the School of Medicine. Case histories are presented and discussed by the students and members of the Staff. Clinical, laboratory, and necropsy findings are correlated.

427-28 *Clinical Pathological Conferences II* The Staff

Academic year—1 hour a week.

Continuation of Pathology 327.

429-30 *Clinical Pathological Conferences III* The Staff

Academic year—1 hour a week.

Conferences are held at the University Hospital. Attendance is required of students during the medical clerkship there.

492 *Surgical Pathology II* Newman

Spring—1 hour a week.

A systematic study of the gross and microscopic changes in the organs and tissues commonly removed surgically.

493-94 *Pathology Clerkship (elective)* The Staff

Academic year—as arranged.

A limited number of students receive training in surgical pathology and necropsies in the laboratories of the University Hospital.

PEDIATRICS

- Margaret Mary Nicholson, A.B., M.D., *Clinical Professor of Pediatrics*
 Edward Lewis, M.D., *Clinical Professor of Pediatrics*
 William Staton Anderson, A.B., M.D., *Clinical Professor of Pediatrics*
 Robert Harold Parrott, M.D., *Clinical Professor of Pediatrics*
 Leroy Edward Hoeck, M.D., *Clinical Professor of Pediatrics*
 Joseph Michael LoPresti, B.S., M.D., *Associate Professor of Pediatrics*
Executive Officer
 John Augustine Washington, B.S., M.D., *Associate Clinical Professor of Pediatrics*
 Reginald Spencer Lourie, B.S., M.D., Med.Sc.D., *Associate Clinical Professor of Pediatric Psychiatry*
 Thomas Elmer Reichelderfer, B.S., M.D., M.P.H., *Associate Clinical Professor of Pediatrics*
 Margaret Frances Gutelius, A.B., M.D., *Assistant Professor of Pediatrics*
 Mabel Harlakenden Grosvenor, M.D., *Assistant Clinical Professor of Pediatrics*
 Aaron Nimetz, A.B., M.D., *Assistant Clinical Professor of Pediatrics*
 George Maksim, M.D., M.S. in Ped., *Assistant Clinical Professor of Pediatrics*
 William Allen Howard, A.B., M.D., *Assistant Clinical Professor of Pediatrics*
 John Howell Peacock, Jr., B.S., M.D., *Associate in Pediatrics*
 Maynard Irving Cohen, A.B., M.D., *Associate in Pediatrics*
 Mary Katherine Laurence Sartwell, A.B., M.D., *Associate in Pediatrics*
 Allan Bertram Coleman, M.D., *Associate in Pediatrics*
 Charles Frederick Stiegler, A.B., M.D., *Associate in Pediatrics*
 Hugh Gambel Clark, A.B., M.D., *Associate in Pediatrics*
 Adrian Recinos, Jr., B.S., M.D., *Associate in Pediatrics*
 Robert Edward Martin, M.D., *Associate in Pediatrics*
 Charles Richard Webb, B.S., M.D., *Associate in Pediatrics*
 William Stark, A.B., M.D., *Associate in Pediatric Psychiatry*
 Archibald Rich MacPherson, A.B., M.D., *Associate in Pediatrics*
 Herbert Harold Diamond, M.D., *Clinical Instructor in Pediatrics*
 Reginald Henry Mitchell, M.D., *Clinical Instructor in Pediatrics*
 Robert Orr Warthen, M.D., *Clinical Instructor in Pediatrics*
 Emilie Annabelle Black, B.S., M.D., *Clinical Instructor in Pediatrics*
 Robert Harper Anderson, M.D., *Clinical Instructor in Pediatrics*
 Warren Godfrey Preisser, A.B., M.D., *Clinical Instructor in Pediatrics*
 Sanford Leon Leikin, M.D., *Clinical Instructor in Pediatrics*

Bennett Olshaker, A.B., M.D., *Clinical Instructor in Pediatric Psychiatry*
 Harold Taylor Yates, M.D., *Clinical Instructor in Pediatrics*
 Roger Bergstrom, M.D., *Clinical Instructor of Pediatrics*
 George Joel Cohen, M.D., *Clinical Instructor in Pediatrics*
 Milton Sanford Glatt, A.B., M.D., *Clinical Instructor in Pediatrics*
 Marvin Irwin Mones, M.D., B.S., *Clinical Instructor in Pediatrics*
 Mary Alice Vann Fox, A.B., M.D., *Clinical Instructor in Pediatrics*
 William Robert O'Reilly, B.S., M.D., *Clinical Instructor in Pediatrics*
 John William Stohlman, B.S., M.D., *Clinical Instructor in Pediatrics*
 James Larrabee Hatleberg, A.B., M.D., *Clinical Instructor in Pediatric Psychiatry*

SPECIAL LECTURER

Myron Ezra Wegman, A.B., M.D., M.P.H., *Director, Division of Education and Training, Pan American Sanitary Bureau, Regional Office for the Americas of World Health Organizations; Pediatrics*

256 Pediatrics

The Staff

Spring—2 hours a week.

Lectures on physiology of the newborn, normal behavior, emotional and physical development, infant nutrition, diseases of the newborn, common anomalies and system illnesses of infancy and childhood. Medical School.

357-58 Clinical Clerkship: General Pediatrics

LoPresti and Staff

Two weeks as arranged during academic year.

Introduction to clinical pediatrics. Emphasis on bedside discussion and group seminars including the newborn. Ward rounds. Five students in rotation. D. C. General Hospital.

359-60 Clinical Clerkship: Contagious Diseases

LoPresti and Staff

Two weeks as arranged during academic year.

Conferences and bedside discussion on contagious and infectious diseases. Prevention and quarantine measures. Five students in rotation. D. C. General Hospital.

361-62 Clinical Conferences I

Gutelius and Staff

Academic year—1 hour a week.

Required. Presentation and discussion by students of current patient problems. D. C. General Hospital.

363-64 *Ward Rounds*

Nicholson, LoPresti, and Staff

Academic year—as arranged.

Bi-weekly ward rounds, with students and Resident Staff. D. C. General Hospital.

365-66 *Psychiatry*

Lourie and Staff

Academic year—as arranged.

Lectures on normal behavior and emotional development. Case analysis.

457-58 *Clinical Clerkship*

Anderson and Staff

Six weeks as arranged during academic year.

Full time, including assignment to night and holiday admissions. Case studies on wards under direct Resident supervision. Ward rounds with Staff and Residents. Twelve students. Children's Hospital.

459-60 *Outpatient Clinics*

Gutelius and Staff

Academic year—as arranged.

Work in Medical and Specialty clinics including surgery, allergy, X-ray, child welfare, cardiology, dermatology, neurology, and child guidance. Children's Hospital.

461-62 *Clinical Pathological Conferences*

The Staff

Academic year—1 hour a week.

Clinical and pathological discussion of recent patient history and laboratory data. Children's Hospital.

463-64 *Section Conferences*

The Staff

Academic year—twice a week.

Discussion of clinical problems of diagnosis and treatment of current patients. Children's Hospital.

465-66 *Section Conferences*

The Staff

Academic year—1 hour a week.

Surgical diagnosis, pre- and post-operative management. Children's Hospital.

467-68 *Clinical Conferences II*

LoPresti and Staff

Academic year—1 hour a week.

Required. Case presentation by students. Staff and student discussion of diagnosis and management. Medical School.

469-70 *Child Guidance and Development*

Lourie

Academic year—as arranged.

Clerkship in fourth year including Well Baby Clinic. Group and class conferences.

PHARMACOLOGY

- Paul Kenneth Smith, Ph.D., *Professor of Pharmacology, Executive Officer*
 Harold George Mandel, Ph.D., *Professor of Pharmacology*
 Ralph Grafton Smith, M.D., Ph.D., *Clinical Professor of Pharmacology*
 Bernard Beryl Brodie, Ph.D., *Professorial Lecturer in Pharmacology*
 Clarke Davison, Ph.D., *Associate Professor of Pharmacology*
 Peter Bruno Danneberg, M.D., *Assistant Professor of Pharmacology*
 Paul Wilhelm Müller, Dr. sc. nat., *Assistant Research Professor of Pharmacology*
 Norman Henry Carey, Ph.D., *Assistant Research Professor of Pharmacology*
 Donald Bernard Roodyn, Ph.D., *Assistant Research Professor of Pharmacology*
 Claudia Sebeste Prickett, Ph.D., *Assistant Research Professor of Pharmacology*

SPECIAL LECTURER IN PHARMACOLOGY

- William Vincent Crahan Leahy, Ph.D., *Assistant Chief, Radioisotope Service, Veterans Administration Hospital, Washington, D.C.*

Master of Arts or Master of Science in the field of Pharmacology (Columbia College).—Prerequisite: a Bachelor of Arts or Bachelor of Science degree, respectively. The undergraduate program must include the following courses or the equivalent: Biology 1-2 or Zoology 1-2; Physics 12, 13, 16; Chemistry 11-12, 21, 151-52. Biochemistry 221-22 and Physiology 115, 117 are recommended as the undergraduate electives if the candidate wishes to complete the work for the Master's degree in one year.

Required: the general requirements of Columbia College as stated on pages 91-95. The thirty hours of required work must include Biochemistry 221-22; Physiology 115, 117; Pharmacology 261, 263, 267-68, 269-70, 299-300. The remaining courses may be selected from Biochemistry 224, 225-26, 232; Physiology 150; Bacteriology 112, 209, 230; Pharmacology 260.

Master of Arts or Master of Science in the field of Chemotherapy (Columbia College).—Prerequisite: a Bachelor of Arts or a Bachelor of Science degree, respectively. The undergraduate program must include the following courses or the equivalent: Biology 1-2 or Zoology 1-2, 41-42; Physics 12, 13; Chemistry 11-12, 21, 151-52. Biochemistry 221-22 is recommended as an undergraduate elective if the candidate wishes to complete the work for the Master's degree in one year.

Required: Bacteriology 112; Biochemistry 221-22; Pharmacology 262, 267-68, 269-70, 299-300. The remaining courses may be selected from Bacteriology 209, 229, 230; Biochemistry 224, 225, 226, 232; Physiology 115, 117; Pharmacology 261, 263.

Doctor of Philosophy (Graduate Council).—See page 104.

249-50 Introduction to Medical Research* (3-3)

Academic year—Sat. 8:00 A.M. to 1:00 P.M.

Primarily for graduate students. A comprehensive introduction to the major medical research techniques—statistical, physical, chemical, biological, and radioisotopic—as applied to biological materials in the medical sciences. Laboratory fee, \$7.50 a semester.

261 Pharmacology (5)

Fall—5 hours a week.

Lectures and conferences concerning the interaction of drugs and biological systems as a basis for the rational therapy of disease. Open to qualified nonmedical students.

262 Chemotherapy (1)

Spring—1 hour a week.

Continuation of Pharmacology 261.

263 Pharmacology Laboratory (1)

Fall—3 hours a week.

Laboratory instruction and demonstrations designed to complement Pharmacology 261. Open to qualified nonmedical students.

267-68 Pharmacological Research (arr.)

Academic year—as arranged.

Primarily for those properly qualified graduate and medical students seeking careers in pharmacology.

269-70 Pharmacology Seminar (1-1)

Academic year—2 hours a week.

Recent advances in pharmacology. For those interested in pharmacological research. Open to qualified nonmedical students.

279-80 Special Methods in Research (arr.)

Academic year—as arranged.

A course to familiarize the student with advanced biochemical, biological, and physiological methods employed in pharmacological investigations. Open to qualified nonmedical students.

299-300 Thesis (3-3)

Academic year—as arranged.

Required of Master of Arts and Master of Science candidates.

339-40 Therapeutic Conferences I

Staff of Pharmacology and Medicine

Academic year—1 hour a week.

Conferences designed to emphasize the application of pharmacological principles to the problems of clinical medicine.

* This is an interdepartmental course. The student should register in the department of his research.

PHARMACY

- Charles Watson Bliven, M.S., *Professor of Pharmacy, Executive Officer*
 Robert Meyer Leonard, Ph.D., *Associate Professor of Pharmacology and Pharmacognosy*
 Carson Gray Frailey, A.B., LL.B., *Associate Professorial Lecturer on Pharmaceutical Law*
 Franklin Dero Cooper, M.S., *Assistant Professor of Hospital Pharmacy*
 Charles Joseph Kokoski, Ph.D., *Assistant Professor of Pharmacy*
 Samuel Meyer Schwartz, Ph.D., *Assistant Professor of Pharmaceutical Chemistry*
 Gust George Koustenis, B.S. in Phar., M.B.A., *Instructor in Pharmacy Administration*

SPECIAL LECTURERS

- William Paul Briggs, M.S., Sc.D., LL.D., *Executive Director and Secretary, American Foundation for Pharmaceutical Education; Pharmacy Training*
 John Christian Krantz, Jr., Ph.D., *Professor of Pharmacology, University of Maryland; Pharmacological Research*
 Justin Lawrence Powers, Ph.D., *Chairman, Committee on National Formulary, American Pharmaceutical Association; Official Drug Standards*
 Nevis Eugene Cooks, B.S., B.S. in Phar., *Assistant to the Director, Bureau of Enforcement, Food and Drug Administration; Drug Control*
 Louis Edward Kazin, Ph.D., *Associate Editor, Drug Topics; Contemporary Pharmacy*
 Karl Bambach, Ph.D., *Executive Vice-President, Pharmaceutical Manufacturers Association; Pharmaceutical Industry*
 Daniel Leo Finucane, B.S., M.D., *Director of Public Health, District of Columbia; Public Health*
 William Shoulden Apple, Ph.D., *Assistant Secretary, American Pharmaceutical Association; Pharmaceutical Organizations*

Bachelor of Science in Pharmacy (School of Pharmacy).—Prerequisite: the Pharmacy curriculum in the Junior College, see page 72. The requirements for the degree as stated on pages 159-62.

Master of Science in Pharmacy (School of Pharmacy).—Prerequisite: the degree of Bachelor of Science from an accredited institution. The requirements for the degree are stated on pages 162-64.

FIRST GROUP

1-2 *History and Literature of Pharmacy* (2-1)

Academic year—morning.

Orientation in pharmacy; a survey of the development of the profession of pharmacy and the literature of pharmacy.

21-22 *General Pharmacy* (4-4)

Kokoski, Cooper, Schwartz

First half: fall—lecture (3 hours), laboratory (3 hours)—afternoon.
Second half: spring—lecture (2 hours), laboratory (6 hours)—afternoon.

Essential pharmaceutical processes; the theory and manufacture of pharmaceuticals; the pharmacopoeial and formulary galenical preparations; the pharmaceutical usage of certain classes of substances and preparations. Laboratory fee: Pharmacy 21, \$11; Pharmacy 22, \$18.

23 *Pharmacognosy* (3)

Fall: lecture (2 hours)—morning; laboratory (3 hours)—morning and afternoon.

Macroscopic and microscopic. Prerequisite: Botany 1. Laboratory fee, \$11.

25 *Pharmaceutical Calculations* (3)

Fall—morning.

The system of weights and measures and their application in the practice of pharmacy.

SECOND GROUP

101 *Inorganic Pharmaceutical Chemistry* (3)

Schwartz

Fall: lecture (2 hours)—morning, laboratory (3 hours)—afternoon.

A study of the occurrence, methods of preparation, properties, and uses of the important inorganic chemicals encountered in pharmacy and medicine. Prerequisite or concurrent registration: Chemistry 2. Laboratory fee, \$11.

102 *Dispensing Pharmacy* (4)

Kokoski, Koustenis

Spring: lecture (3 hours), laboratory (6 hours)—afternoon.

Compounding of typical prescriptions and a study of inorganic chemicals. Prerequisite: Pharmacy 22; concurrent registration: Pharmacy 110. Laboratory fee, \$18.

103 *Dispensing Pharmacy* (4)

Kokoski, Koustenis

Fall: lecture (2 hours)—morning, laboratory (6 hours)—afternoon.

Continuation of Pharmacy 102. Laboratory fee, \$18.

105-6 Pharmacology I (2-2)

Leonard

Academic year—afternoon.

The general principles of pharmacology; locally acting drugs; chemotherapeutic agents; antibiotics; antianemia drugs; endocrine drugs; vitamins. Prerequisite or concurrent registration: Physiology 115.

107 Pharmacy Accounting (3)

Koustenis

Fall—morning.

The financial records required in the operation of a pharmacy.

110 Chemistry and Pharmacy of Medicinal Products (3)

Schwartz

Spring—morning.

A study of the chemistry, structural relationship to action, and uses of the official and important nonofficial synthetic and natural organic medicinal compounds. Prerequisite or concurrent registration: Chemistry 152.

111 Chemistry and Pharmacy of Medicinal Products (3)

Schwartz

Fall—morning.

A continuation of Pharmacy 110. Prerequisite: Pharmacy 110.

113 Chemistry and Pharmacy of Medicinal Products (1)

Schwartz

Laboratory (3 hours). Fall—afternoon; spring—afternoon.

Preparation of selected official organic drugs. Prerequisite: Pharmacy 110. Prerequisite or concurrent registration: Pharmacy 111. Laboratory fee, \$11.

165-66 Pharmacology II (3-3)

Leonard

First half: fall—morning. *Second half:* spring—lecture (2 hours), morning, laboratory (4 hours)—afternoon.

Drugs acting on the central nervous system, the autonomic nervous system, and specific tissues; toxicology; diagnostic drugs; biological assays. Prerequisite: Physiology 115 and 117; Pharmacy 106. Pharmacy 166: laboratory fee, \$18.

167-68 Pharmacology III (3-3)

Leonard

First half: spring—as arranged. *Second half:*—not offered 1959-60.

Laboratory work in pharmacological technique. Prerequisite: Pharmacy 106. Prerequisite or concurrent registration: Pharmacy 165. Laboratory fee, \$18 a semester.

172 *Advanced Dispensing Pharmacy* (3)

Spring—morning.

The study of special problems in dispensing pharmacy. Prerequisite: Pharmacy 103. Laboratory fee, \$18.

174 *Quantitative Pharmaceutical Analysis* (3)

Spring: lecture (1 hour), laboratory (6 hours)—morning.

Drug analysis. Prerequisite: Chemistry 22. Laboratory fee, \$18.

176 *Pharmaceutical Law* (2)

Spring—morning.

178 *Pharmacy Management* (4)

Spring—morning.

Policies and operations relating to the management of pharmacy.

182 *Advanced Pharmacology I* (2)

Not offered 1959-60.

Special problems in the field of pharmacology. Prerequisite or corequisite: Pharmacy 166.

184 *Special Problems in Pharmacy* (arr.)

Fall—as arranged; spring—as arranged.

Directed laboratory and library research on special problems in pharmacy and pharmaceutical chemistry. For selected undergraduate students. Prerequisite: Pharmacy 102 and 110. Fees to be arranged.

188 *Survey* (1)

Spring—morning.

A symposium covering the various phases of pharmacy.

190 *Hospital Pharmacy* (1)

Spring—afternoon.

Organization and functions of hospitals; organization and operation of a hospital pharmacy; professional and sickroom supplies. Prerequisite: Pharmacy 102.

192 *Hospital Pharmacy: Prescription Practice* (1)

Fall—as arranged; spring—as arranged; summer 1959.

Prescription practice in the University Hospital Pharmacy. Prerequisite: Pharmacy 102.

194 *Manufacturing Pharmacy* (3)

Cooper and Staff

Lecture (1 hour), laboratory (6 hours). Fall—as arranged; spring—as arranged; summer 1959.

The manufacture of bulk pharmaceuticals in the University Hospital Pharmacy. Elective for seniors.

THIRD GROUP*

201-2 *Survey of Pharmaceutical Literature* (1-1)

The Staff

Assigned library research on the development of pharmaceutical literature.

203-4 *Special Problems in General Pharmacy* (2-2)

Kokoski

Investigations of problems involved in the manufacture of pharmaceutical preparations on a laboratory scale. Laboratory fee, \$18 a semester.

206 *Pharmaceutical Technology* (4)

Kokoski, Cooper

Lecture (2 hours); laboratory (6 hours).

A study of advanced manufacturing pharmacy, including formula development for the different types of preparations. Laboratory fee, \$18

215-16 *Advanced Pharmacology II* (3-3)

Leonard

Lecture (1 hour); laboratory (6 hours).

Special studies on biological assay methods. Laboratory fee, \$18 a semester.

221-22 *Chemistry of Naturally Occurring Organic Medicinal Products* (5-5)

Schwartz

Lecture (3 hours); laboratory (6 hours).

A study of the isolation, chemistry, and relationship between the constitution and physiologic action of alkaloids, fats and sterols, terpenes, carbohydrates, glycosides, and the various biological products. Laboratory fee, \$18 a semester.

223-24 *Chemistry of Synthetic Organic Medicinal Products* (5-5)

Schwartz

Lecture (3 hours); laboratory (6 hours).

A study of the chemistry and relationship between the structure and physiologic action of hydrocarbons and their derivatives, nitrogen compounds, oxygen compounds, sulfur compounds, and organo-metallic compounds. Laboratory fee, \$18 a semester.

* Courses in this group are not offered in 1959-60.

- 226 Determination of Physical Constants (2)**
Lecture (1 hour); laboratory (3 hours).
A laboratory and lecture study of the determination of physical constants of medicinal products. Laboratory fee, \$18. Schwartz, Bl
- 228 Food and Drug Analysis (4)**
Lecture (2 hours); laboratory (6 hours).
A study of the composition of some common foods and food products. Laboratory fee, \$18. Schwartz, Bl
- 231 Pharmacology of Anesthetic Drugs (4)**
Theoretical consideration of the principles of anesthesiology and laboratory study of the action of anesthetic drugs. Laboratory fee, \$18. Lect
- 234 Pharmacology of Autonomic Drugs (4)**
A study of action and interaction of drugs principally influencing the autonomic nervous system. Laboratory fee, \$18. Lect
- 236 Experimental Toxicology (4)**
Pharmacological action of toxic drugs correlated with chemical and pathological studies. Laboratory fee, \$18. The S
- 251-52 Graduate Seminar (1-1)**
Current problems and trends in pharmacy. Required of all students registered for the Master's degree. The S
- 295-96 Research and Thesis (arr.)**
Investigations of special problems in the major field of interest. Thesis preparation. Semester hours (not to exceed 6) and fees arranged.

PHILOSOPHY

Charles Edward Gauss, Mus.B., Ph.D., *Elton Professor of Philosophy, Executive Officer*

Richard Harold Schlagel, Ph.D., *Assistant Professor of Philosophy*

Bachelor of Arts with a major in Philosophy (Columbian College—Field-of-Study).—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 70.

Required: in addition to the general requirements of Columbian College stated on pages 85-91, the grade of "pass" for the Philosophy major examination at the end of the senior year. The coordinated knowledge upon which the student will be examined is summarized under the following general headings: (1) history of philosophy, (2) logic and theory of knowledge, (3) social philosophy. The Department of Philosophy provides a proseminar (Philosophy 199-200) intended to assist the student in preparing for the major examination.

Master of Arts in the field of Philosophy (Columbian College).—Prerequisite: an undergraduate major in Philosophy at this University or the equivalent, as attested by the passing of this University's major examination in Philosophy; and the following specific courses or the equivalent: Philosophy 111-112, 113, 121-122, and 131.

Required: the general requirements of Columbian College as stated on pages 91-95. As much as possible of the required twenty-four semester hours in course work should be in the third-group courses. Students electing second-group courses are expected to do more intensive work than is demanded of undergraduates. A general written examination on the problems of the field of Philosophy and a departmental oral examination are required.

FIRST GROUP

51-52 *Introduction to Philosophy (3-3)*

The Staff

Academic year—morning and evening; summer 1959—Philosophy 51 (3)

A critical introduction to the problems of modern philosophy in relation to scientific and social developments since the Renaissance. This is a unit complete in itself for those interested in the problems of philosophy relevant to modern thought.

SECOND GROUP

111-112 *History of Philosophy (3-3)*

Gauss

Academic year—morning; summer 1959—Philosophy 111 (3).

History of western philosophy from Thales to Kant.

113 *History of Nineteenth and Twentieth Century Philosophy (3)*

Gauss

Fall—evening.

A history of ideas and influences explaining contemporary thought.

121-22 *Logic and Scientific Method* (3-3)

Academic year—evening.

The study of formal logic and the means of investigation and deduction employed in the sciences; theory of scientific inference and prediction.

131 *Ethics* (3)

Fall—morning.

An examination of ethical theories, the relation of ethics to science and psychology.

142 *Philosophies Men Live by* (3)

Not offered 1959-60.

The influence upon contemporary personal and social problems of the great eastern and western philosophies which have served as models for everyday living and moulded man's cultures and institutions.

152 *Epistemology* (3)

Spring—morning.

Examination of problems related to perception, verification, and criteria of truth, difference between *a priori* and *a posteriori* statements, universals, the concept of mind.

162 *Aesthetics* (3)

Spring—evening.

The problems of appreciation and judgment in the arts, theories of the process of artistic creation. Emphasis on contemporary arts and criticism.

171-72 *American Philosophy* (3-3)

Not offered 1959-60.

A general history of philosophy in the United States, correlated with the development of European thought.

180 *Philosophy of History* (3)

Not offered 1959-60.

Problems of historical knowledge and explanation. Critique of philosophies of history.

193 *Topics in Contemporary Philosophy* (3)

Not offered 1959-60.

199-200 *Proseminar: Readings for the Major* (3-3)

Academic year—evening.

Conferences and group discussions.

THIRD GROUP

- 201-2 *Readings and Research* (3-3) The Staff
Academic year—as arranged.
Advanced readings and reports. Investigation of special problems.
- 211-12 *Seminar in Plato and Aristotle* (3-3) Gauss
First half: fall—evening. Second half: not offered 1959-60.
Topic for fall semester: Plato.
- 213-14 *Seminar in Seventeenth and Eighteenth
Century Philosophy* (3-3) Schlagel
First half: not offered 1959-60. Second half: spring—evening.
Topic for spring semester: Hume.
- 216 *Seminar in Kant* (3)
Not offered 1959-60.
- 299-300 *Thesis* (3-3) The Staff

PHYSICAL EDUCATION FOR MEN*

William Henry Myers, A.M., *Professor of Physical Education for Men*
 † Joseph Henry Krupa, M.S., Ed.D., *Professor of Physical Education for Men, Executive Officer*

Raymond George Hanken, B.S. in P.E., A.M. in Ed., *Associate Professor of Physical Education for Men*

Vincent James DeAngelis, B.S. in P.E., A.M. in Ed., *Associate Professor of Physical Education for Men*

Pat Abernethy, A.B., *Lecturer in Physical Education*

William Dove Thompson, A.M., Ed.D., *Lecturer in Physical Education*

William Jennings Reinhart, B.B.A., *Associate in Physical Education for Men*

Eugene Hughey Sherman, Sr., B.S., *Associate in Physical Education for Men*

This department includes all the recognized athletic activities of the men students of the University.

Two years of Physical Education (Physical Education 1-2 and 11-12) are required of all men for graduation, except those students exempt under the regulations stated on pages 53-54.

Upon entering the University, all freshmen or other undergraduate students who have not fulfilled the Physical Education requirements are given a medical examination. Assignments for medical examinations will be given at the time of registration. The students who satisfy the requirements of the medical examination are then given a physical efficiency test in the general bodily skills of endurance, and strength; and in swimming. If the physical efficiency test is passed, the student may elect from the following list of activities:

Setting-up Exercises (stretching exercises)

Body Building Exercises (gymnastic apparatus and weight training)

Competitive games and sports

Swimming (beginner, intermediate, advanced, life saving)

If the physical efficiency test is not passed, the student will be assigned to a class for training in the above activities in the order listed.

The Department furnishes gymnasium uniforms and personal equipment on receipt of a small payment.

Bachelor of Science in Physical Education (School of Education)—Presented at the Physical Education for Men curriculum in the Junior College, see pages 73-74. The requirements for the degree are stated on pages 169-70 and 170-71.

* The University is not responsible for injuries received in intercollegiate or intramural sports or in any of the activities of the departments of Physical Education, and the student assumes full responsibility therefor.

† On sabbatical leave fall semester 1959-60.

FIRST GROUP

1-2 *Freshman Physical Education* (1-1) The Staff

Academic year—as arranged.

Two periods of supervised activity a week. Locker and towel fee,* \$4.50 a semester.

11-12 *Sophomore Physical Education* (1-1) The Staff

Academic year—as arranged.

Two periods of supervised activity a week. Locker and towel fee,* \$4.50 a semester.

43-44 *Techniques of Physical Education Motor Activities* (2-2) DeAngelis, Krupa

Academic year—morning.

Fundamental skills, rules, and organization. Locker and towel fee,* \$4.50 a semester.

45-46 *Methods and Materials for Teaching Individual and Dual Sports in Secondary Schools* (2-2) Hanken, Krupa

Academic year—afternoon.

Tennis, golf, swimming, wrestling, badminton, bowling. Locker and towel fee,* \$4.50 a semester.

47 *Introduction to Physical Education* (2) Myers

Fall—morning.

An orientation course presenting the problems of physical education, vocational analysis, scientific foundations, and scope of field.

48 *Introduction to Recreation* (2) Hanken

Spring—as arranged.

The role of recreation in modern living; current practices in community recreation work; standards of training, experience, and salary; types of leadership.

49 *Human Anatomy* (3) Stallings

Fall—morning.

The structure of the human body. Basic course for physical education majors. Also open to both men and women not majoring in Physical Education. Prerequisite: Biology 1-2 or Zoology 1-2.

*The locker and towel fee is required for registration in one or more of the activity courses.

50 *Kinesiology* (3)

Spring—morning.

A study of the anatomical mechanism of movement, analysis of the action of muscles in physical education activities. Prerequisite: an approved course in anatomy.

58 *First Aid and Care of Athletic Injuries* (2)

Spring—morning.

Prevention and emergency care of injuries of all types, with special reference to first aid, civil defense, bandaging, and massage. Prerequisite: Biology 1-2 or Zoology 1-2.

SECOND GROUP

101 *Physical Education in the Elementary School* (3)

Fall—afternoon and evening.

Physical growth and development of the child and adolescent. Survey of age characteristics and organization of physical education activities for the various age levels in elementary school, playground, and settlement house programs. Methods and materials of tumbling, dance, and self-testing activities.

103 *History and Principles of Physical Education* (3)

Fall—morning.

Survey of history as it relates to contemporary physical education. Study of aims, objectives, and philosophy of physical education.

105-6 *Adapted Physical Education and Physical Examinations* (3-3)

Academic year—morning.

Cause and correction of faulty body mechanics, physical examination methods for the diagnosis of postural defects, prescription of exercises and program adaptation. Prerequisite: Physical Education 49 and 50.

107 *Techniques for Teaching Recreational Dance* (1 to 2)

Fall—morning.

Methods and materials for teaching the country and social dances of America and the folk dances of other countries to secondary-school and adult groups. Square-dance calling is included. Locker and towel fee,* \$4.50.

*The locker and towel fee is required for registration in one or more of the activity courses.

109-10 Leadership Organization in the Intramural Program (2-2) DeAngelis

Academic year—afternoon.

Principles of administration, organization, and supervision of intramural activities in the physical education program of the junior high school, senior high school, and college.

113-14 Methods and Practice in Teaching Physical Education Activities (2 to 4-2 to 4) Hanken and Staff

Academic year—afternoon.

Principles and methods applied to learning and teaching physical education activities. Supervised laboratory. Locker and towel fee,* \$4.50 a semester.

115-16 Methods and Materials for Teaching Team Sports in Secondary Schools (2 to 4-2 to 4) DeAngelis, Hanken

Academic year—morning.

Football, basketball, baseball, track and field. Locker and towel fee,* \$4.50 a semester.

117 Methods of Teaching Modern Dance (1 to 2) Burtner

1960-61 and alternate years.

Techniques for the teaching of movement as a medium of expression. Practical work in body technique, composition, and the analysis of accompaniment for dance including instrumental, voice, and percussion. Application is made to both secondary school and adult age levels. Locker and towel fee,* \$4.50.

118 Dance Production (1 to 2) Burtner

1960-61 and alternate years.

Planning and staging of performances for demonstrations, dance concerts, and folk festivals. Lighting, costuming, sets, and make-up. Choreography for concerts, musicals, and plays for students taking course for two credits. Locker and towel fee,* \$4.50.

121 School and Community Health Programs (3) The Staff

Fall—afternoon.

Health services, healthful environment, health instruction, sources of material for general health knowledge. Prerequisite: Biology 1-2 or Zoology 1-2.

122 Methods and Materials for Health Education (3) Atwell

Spring—evening.

Methods and materials for teaching health at each age level. Prerequisite: Biology 1-2 or Zoology 1-2.

*The locker and towel fee is required for registration in one or more of the activity courses.

131 Tests and Measurements in Physical Education (3)

Fall—morning.

Critical survey of tests in physical activities, methods of test construction, elementary statistics.

132 Camp Leadership (1 to 2)

Spring—afternoon.

Survey of outdoor education programs with special emphasis on leadership techniques for counselors.

133-34 Observation and Student Teaching (3-3 to 6)

First half: fall and spring—as arranged. Second half: fall and spring—as arranged.

Assignments are made to schools in Washington and the vicinity. Physical Education 134, student teaching fee, \$50.

136 Survey of Dance History and Dance Forms (3)

Not offered 1959-60.

The development of dance from primitive ritual to present day recreational and art forms of the dance. Includes ethnologic dance, practice and discussion of fundamental movement techniques, and composition.

138 Organization and Administration of Physical Education (3)

Spring—morning and evening.

Organization and administration of physical education programs in elementary and secondary schools and in colleges. Study of plans, fields, equipment, and programs.

151-52 Recreational Leadership Activities (1 to 3-1 to 3)

1959-60 and alternate years: academic year—evening.

Fall semester: basic skills for the preschool and school-age child. Laboratory practice in crafts, music, dramatics, physical and social activities. Spring semester: basic skills for the teen-age and adult. Art and crafts, dramatics, physical and social activities.

161 Community Organization for Recreation (3)

1960-61 and alternate years.

Resources, principles, and methods in organizing community recreation services.

162 *Administration of Community Recreation Programs (3)* Thompson

1960-61 and alternate years.

Factors and problems in administering recreation including surveys, legislation, program, area, facilities, leadership, finance, and public relations.

PHYSICAL EDUCATION FOR WOMEN*

Ruth Harriet Atwell, A.M., *Professor of Physical Education for Women
Executive Officer*

Helen Bennett Lawrence, A.M., *Professor of Physical Education for
Women*

†Elizabeth Burtner, A.M., *Professor of Physical Education for Women*

Loretta May Stallings, A.M., *Assistant Professor of Physical Education
for Women*

Camille Jacob Craig, B.S. in P.E., A.M. in Ed., *Assistant Professor of
Physical Education for Women*

Gay Ellen Cheney, B.S. in Ed., *Assistant Professor of Physical Education
for Women*

Pat Abernethy, A.B., *Lecturer in Physical Education*

Mabel Vierling McEwan, A.B., *Associate in Physical Education for
Women*

William Dove Thompson, A.M., Ed.D., *Lecturer in Physical Education*

Two years of Physical Education (Physical Education 1-2 and 11-12) are required of all women for graduation, except students exempt under regulations stated on pages 53-54. In the fall a complete medical and physical examination is given each student for the purpose of discovering individual needs. Students whose examinations indicate the desirability of remedial or retraining activity are assigned to a program especially adapted to their needs. This limited program includes moderate sports and individual exercises in small groups under careful supervision.

The required costume for Physical Education classes may be purchased at the University Book Store.

Bachelor of Science in Physical Education (School of Education).—Present site: the Physical Education for Women curriculum in the Junior College of page 74. The requirements for the degree are stated on pages 169-70 and 170-71.

Within the curriculum leading to the degree of Bachelor of Science in Physical Education there is opportunity for specializing in dance, correctives, or recreation.

FIRST GROUP

1-2 Freshman Physical Education (1-1)

Academic year: fundamentals of health and physical education—morning and afternoon; activity—morning and afternoon.

One period of fundamentals of health and physical education and two periods a week chosen from the activities offered each season.

* The University is not responsible for injuries received in intercollegiate or intramural sports or in any of the activities of the departments of Physical Education, and the student assumes full responsibility therefor.

† On sabbatical leave spring semester 1959-60.

Fundamentals of health and physical education: one semester on study of the factors involved in the general maintenance of health, efficient use of the body, and fundamentals of movement; one semester on fundamentals of dance.

Activities: badminton, basketball, body mechanics, canoeing, field hockey, recreational dance, golf, modern dance, riding, skating, swimming, synchronized swimming, tennis, bowling, volleyball, softball, lifesaving. Locker and towel fee,* \$4.50 a semester.

11-12 Sophomore Physical Education (1-1) The Staff

Academic year: two periods a week—morning and afternoon.

Two periods a week chosen from the activities offered each season as listed under Physical Education 1-2. Locker and towel fee,* \$4.50 a semester.

43-44 Techniques of Physical Education Motor Activities (2-2) The Staff

Academic year—as arranged.

Fundamental skills, rules, and organization. Locker and towel fee,* \$4.50 a semester.

47 Introduction to Physical Education (2) Myers

Fall—morning.

An orientation course presenting the problems of physical education, vocational analysis, scientific foundations, and scope of field.

48 Introduction to Recreation (2) Hanken

Spring—as arranged.

The role of recreation in modern living; current practices in community recreation work; standards of training, experience, and salary; types of leadership.

49 Human Anatomy (3) Stallings

Fall—morning.

The structure of the human body. Basic course for physical education majors. Also open to both men and women not majoring in Physical Education. Prerequisite: Biology 1-2 or Zoology 1-2.

50 Kinesiology (3) Lawrence

Spring—morning.

A study of the anatomical mechanism of movement, analysis of the action of muscles in physical education activities. Prerequisite: an approved course in anatomy.

*The locker and towel fee is required for registration in one or more of the activity courses.

51-52 *Methods and Materials for Teaching Physical Education Activities in Secondary Schools and Colleges (2-2)*

The State

Academic year—as arranged.

Team sports: basketball, hockey, softball, soccer, speedball, volleyball. Individual and dual sports: badminton, tennis, golf, archery, swimming and diving, lifesaving and water safety. Group exercises, tumbling. Locker and towel fee,* \$4.50 a semester.

58 *First Aid and Care of Athletic Injuries (2)*

DeAngelis

Spring—morning.

Prevention and emergency care of injuries of all types, with special reference to first aid, civil defense, bandaging, and massage. Prerequisite: Biology 1-2 or Zoology 1-2.

SECOND GROUP

101 *Physical Education in the Elementary School (3)*

Atwell, Bostrom

Fall—afternoon and evening.

Physical growth and development of the child and adolescent. Survey of age characteristics and organization of physical education activities for the various age levels in elementary school, playground, and settlement house programs. Methods and materials of tumbling, games, dance, and self-testing activities.

103 *History and Principles of Physical Education (3)*

Atwell and Staff

Fall—morning.

Survey of history as it relates to contemporary physical education. Study of aims, objectives, and philosophy of physical education.

105-6 *Adapted Physical Education and Physical Examinations (3-3)*

Lawrence

Academic year—morning.

Cause and correction of faulty body mechanics, physical examination, methods for the diagnosis of postural defects, prescription of exercises, and program adaptation. Prerequisite: Physical Education 101 and 50.

*The locker and towel fee is required for registration in one or more of the activity courses.

107 *Techniques for Teaching Recreational Dance (1 to 2)* Burtner

Fall—morning.

Methods and materials for teaching the country and social dances of America and the folk dances of other countries to secondary school age and adult groups. Square-dance calling is included. Locker and towel fee,* \$4.50.

109-10 *Leadership Organization in the Intramural Program (2-2)* DeAngelis

Academic year—afternoon.

Principles of administration, organization, and supervision of intramural activities in the physical education program of the junior high school, senior high school, and college.

111-12 *Methods and Materials for Teaching Physical Education Activities in Secondary Schools and Colleges (2-2)* The Staff

Academic year—morning.

Continuation of methods and materials in activities listed under Physical Education 51-52. Locker and towel fee,* \$4.50 a semester.

113-14 *Methods and Practice in Teaching Physical Education Activities (2 to 4-2 to 4)* The Staff

Academic year—as arranged.

Principles and methods applied to learning and teaching physical education activities. Supervised laboratory. Locker and towel fee,* \$4.50 a semester.

117 *Methods of Teaching Modern Dance (1 to 2)* Burtner

1960-61 and alternate years.

Techniques for the teaching of movement as a medium of expression. Practical work in body technique, composition, and the analysis of accompaniment for dance including instrumental, voice, and percussion. Application is made to both secondary school and adult age levels. Locker and towel fee,* \$4.50.

118 *Dance Production (1 to 2)* Burtner

1960-61 and alternate years.

Planning and staging of performances for demonstrations, dance concerts, and folk festivals. Lighting, costuming, acts, and make-up. Choreography for concerts, musicals, and plays for students taking course for two credits. Locker and towel fee,* \$4.50.

*The locker and towel fee is required for registration in one or more of the activity courses

- 121 *School and Community Health Programs (3)* The St.
 Fall—afternoon.
 Health services, healthful environment, health instruction, source material for general health knowledge. Prerequisite: Biology 1-2, Zoology 1-2.
- 122 *Methods and Materials for Health Education (3)* Ar.
 Spring—evening.
 Methods and materials for teaching health at each age level. Prerequisite: Biology 1-2 or Zoology 1-2.
- 131 *Tests and Measurements in Physical Education (3)* The St.
 Fall—morning.
 Critical survey of tests in physical activities, methods of test construction, elementary statistics.
- 132 *Camp Leadership (1 to 2)* Atwell, St.
 Spring—afternoon.
 Survey of outdoor education programs with special emphasis on leadership techniques for counselors.
- 133-34 *Observation and Student Teaching (3-3 to 6)* Atwell, M.
 Academic year—as arranged.
 Assignments are made to schools in Washington and the District of Columbia. Physical Education 134, student-teaching fee, \$50.
- 136 *Survey of Dance History and Dance Forms (3)* B.
 Not offered 1959-60.
 The development of dance from primitive ritual to present day theatrical and art forms of the dance. Includes ethnologic dance material and discussion of fundamental movement techniques, and composition.
- 138 *Organization and Administration of Physical Education (3)* Atwell, M.
 Spring—morning and evening.
 Organization and administration of physical education programs in elementary and secondary schools and in colleges. Study of fields, equipment, and programs.

- 151-52 *Recreational Leadership Activities (3-3)* Abernethy
1959-60 and alternate years—evening.
Fall semester: basic skills for the preschool and school-age child. Laboratory practice in crafts, music, dramatics, physical and social activities. Spring semester: basic skills for the teen-age and adult. Arts and crafts, dramatics, physical and social activities.
- 161 *Community Organization for Recreation (3)* Thompson
1960-61 and alternate years.
Resources, principles, and methods in organizing community recreation services.
- 162 *Administration of Community Recreation Programs (3)* Thompson
1960-61 and alternate years.
Factors and problems in administering recreation including surveys, legislation, program, area, facilities, leadership, finance, and public relations.

PHYSICAL MEDICINE AND REHABILITATION

Charles Samuel Wise, B.S., M.D., *Professor of Physical Medicine and Rehabilitation, Executive Officer*

John Watt, Jr., M.D., *Assistant Professor of Physical Medicine and Rehabilitation*

Alvin Knudson, B.S., M.D., *Associate in Physical Medicine and Rehabilitation*

Francis Liell Wenger, M.D., *Associate in Physical Medicine and Rehabilitation*

150 *Elements of Physical Medicine*

Spring—as arranged.

In arrangement with the Anatomy Department, lectures and demonstrations of the various tests and measurements are employed in the evaluation of physical disability.

352 *Advanced Physical Medicine*

Spring—1 hour a week.

Lectures and demonstrations concerning the various technical and medical applications of physical medicine and rehabilitation to be presented with the teaching of the associated medical and surgical specialties.

467-68 *Clinical Studies*

Academic year—as arranged.

Clinical teaching and demonstration at the University Hospital.

485 *Research (arr.)*

Fall—as arranged.

Open to medical students and qualified nonmedical students.

PHYSICS

George Martin Koehl, A.M., *Professor of Physics*
 Lewis Slack, Ph.D., *Professor of Physics, Acting Executive Officer*
 Herbert Jehle, Dr. Ing., *Visiting Professor of Physics*
 Herman Hedberg Hobbs, Ph.D., *Associate Professor of Physics*
 John Lyle Prather, Ph.D., *Assistant Professor of Physics*
 Albert Prentice Kenyon, A.M., *Lecturer in Physics*
 John Newell Tevis, A.M., *Lecturer in Physics*
 DeWitt Fisher, M.E., A.M., *Lecturer in Physics*
 John May Harrison, M.S., *Lecturer in Physics*
 Herbert Rabin, Ph.D., *Lecturer in Physics*
 Margaret Wheeler Montzka, A.M., *Instructor in Physics*
 John Ettinger Tompkins, A.M., *Associate in Physics*
 William John Condell, Jr., M.S., *Associate in Physics*

Bachelor of Arts or Bachelor of Science with a major in Physics (Columbia College—Departmental).—Prerequisite: the Arts and Letters or the Science curriculum, respectively, in the Junior College, see pages 70-71. The following courses must be included: Physics 11, 12, 13, 14 and 55; or 11, 14, 15, 16; Chemistry 21; Mathematics 29, 30, and 31.

Students who started work toward a major in Physics prior to the reorganization of the introductory courses in Physics and Mathematics, which went into effect in the fall of 1959-60, may substitute Physics 5, 6, and 7 for Physics 11, 12, and 13; and Mathematics 19 and 20 for Mathematics 29, 30, and 31.

Required, for both the Bachelor of Arts degree and the Bachelor of Science degree, the general requirements of Columbia College as stated on pages 85-91, including Mathematics 112 or 132 and Physics 121, 125, 126, 113, and 153, 155, or 156, plus two of the following: Physics 122, 114, 118, 123, 128, and 142.

Master of Arts or Master of Science in the field of Physics (Columbia College).—Prerequisite: the degree of Bachelor of Arts or Bachelor of Science, respectively, with a major in Physics at this University, or the equivalent. Required: the general requirements as stated on pages 61-65. The thirty hours of required work must include Mathematics 171 (if not taken earlier) and Physics 211-12, 219-20, 255 or 256, and 291-92.

Doctor of Philosophy (Graduate Council).—See page 104.

Bachelor of Science in Engineering with an option in Physics (School of Engineering).—For requirements, see pages 144-47 and 152.

Bachelor of Arts in Education with a teaching field in Physics (School of Education).—Prerequisite: the Education curriculum, pages 72-73.

Required: the physics option, page 176; and the professional courses listed on Page 178.

FIRST GROUP

8 General Physics (3)

Prather and Staff

1959-60 spring—morning and evening; summer 1959.

This course, the fourth in the former sequence of courses in intro-

ductory physics (5, 6, 7, 8) will be offered for the last time in the spring semester of 1959-60 and is limited to students who have completed Physics 7 or 13. Topics considered include electromagnetic waves; light, radio, and X-rays; atomic and molecular structure, radioactivity; nuclear physics; the quantum theory of matter and radiation; and the elementary particles such as electrons, protons, neutrons, and mesons. Prerequisite: Physics 6 and 7.

11 Introductory Physics (3)
(Replaces Physics 5)

Koehl and Staff

Lecture (1 hour), recitation (1 hour), laboratory (2½ hours). Fall—morning, afternoon, and evening. Spring: lecture—morning and evening; recitation—morning, afternoon, and evening; laboratory—morning, afternoon, and evening. Summer 1959.

An introduction to the phenomena of light, heat, force, energy, and motion; and the properties of matter. This course may be taken as a terminal course by nonscience students who want an introduction to the physical sciences. Prerequisite: high school mathematics and plane geometry. Material fee, \$11.

12 Introductory Physics (3)
(Replaces Physics 6)

The Staff

Spring: lecture (1 hour), recitation (1 hour), laboratory (2½ hours)—morning, afternoon, and evening.

Mechanics, wave-motion, and sound. Prerequisite: Physics 11 (or former Physics 5). Material fee, \$11.

13 Introductory Physics (3)
(Replaces Physics 7)

Pratt

Fall: lecture (1 hour), recitation (1 hour), laboratory (2½ hours)—morning, afternoon, and evening; summer, 1959.

Elementary electricity and magnetism. Prerequisite: Physics 12 (or former Physics 6). Material fee, \$11.

14 General Physics (3)

Slack and Staff

Spring: lecture (1 hour), recitation (1 hour), laboratory and conference (2½ hours)—morning, afternoon, and evening.

Mechanics, wave motion and sound. Prerequisite: Physics 11. Prerequisite or concurrent registration: Mathematics 29. Material fee, \$11.

The Staff

15 General Physics (3)

Fall (starting 1960-61): lecture (1 hour), recitation (1 hour), laboratory and conference (2½ hours)—morning, afternoon, and evening.

Electricity and magnetism. Prerequisite: Physics 14. Prerequisite or concurrent registration: Mathematics 30. Material fee, \$11.

16 *General Physics* (3)

The Staff

Spring (starting 1960-61): lecture (2 hours), conference (1 hour)—morning and evening.

Modern physics, molecular structure of matter, structure of the atom. Prerequisite: Physics 13 or 15, Mathematics 30 and consent of the instructor.

55 *Physical Measurements* (3)

Slack and Staff

Fall: lecture (2 hours), laboratory (3 hours)—afternoon and evening.

Theory and methods of precise measurements in the several fields of physics. Prerequisite: Physics 6 and 7, Mathematics 19. Material fee, \$11.

SECOND GROUP

101 *Mechanics* (3)

Jehle

1959-60 and alternate years: fall—morning; 1960-61 and alternate years: fall—evening.

Statics, elasticity, dynamics of solids and fluids, and gravitation. Prerequisite: Physics 12 (or former Physics 6) or 14, Mathematics 31 or 20.

102 *Heat and Thermodynamics* (3)

Prather

1959-60 and alternate years: fall—evening.

Fundamental concepts, heat transfer, the laws of thermodynamics with applications to physical systems. Prerequisite: Physics 16 or 8, Mathematics 31 or 20.

105 *Principles of Electricity* (3)

Slack

1959-60 and alternate years: fall—evening; 1960-61 and alternate years: fall—morning.

Elementary d-c and a-c circuit theory, electric and magnetic fields, dielectric and magnetic materials, motion of charged particles in electric and magnetic fields. Prerequisite: Physics 16 or 8, Mathematics 31 or 20.

106 *Optics* (3)

Koehl

1959-60 and alternate years: spring—evening; 1960-61 and alternate years: spring—morning.

Geometrical optics; elementary theory of wave motions; interference, diffraction, polarization, and dispersion of light; laws of black-body radiation. Prerequisite: Physics 16 or 8, Mathematics 31 or 20.

113 Atomic Physics (3)

1959-60 and alternate years: fall—evening; 1960-61 and alternate years: fall—morning.

Properties of elementary particles, interactions with radiation, atomic structure, optical and X-ray spectra, introduction to wave mechanics. Prerequisite: Physics 16 or 8, Mathematics 31 or 20.

114 Statistical Physics (3)

1959-60 and alternate years: spring—evening.

Classical and quantum statistics with emphasis on Maxwell-Boltzmann statistics; applications to kinetic theory of gases, gaseous diffusion, specific heats of gases and solids. Prerequisite: Physics 16 or 8, Mathematics 31 or 20, permission of the instructor.

116 Quantum and Solid State Physics (3)

Not offered in 1959-60.

Primarily for engineers. Prerequisite: Physics 16, Mathematics 31.

118 Introduction to Solid State Physics (3)

1959-60 and alternate years: spring—morning; 1960-61 and alternate years: spring—evening.

Dielectric and magnetic properties of solids, electron theory of semiconductors, dislocations, and plastic flow. Prerequisite: Physics 113.

123 Nuclear Physics (3)

1959-60 and alternate years: spring—evening; 1960-61 and alternate years: spring—morning.

Structure and stability of atomic nuclei, nuclear transformations and reactions, radiations of nuclei, fission. Prerequisite: Physics 113.

128 Sound (3)

1960-61 and alternate years: summer 1959.

Production, propagation, and detection of sound waves; vibrations of sounding bodies; acoustic instruments and acoustic measurements. Prerequisite: Physics 16 or 8, Mathematics 31 or 20.

132 Electronics (3)

Lecture (2 hours), laboratory (3 hours).

1959-60 and alternate years: spring—evening; 1960-61 and alternate years: spring—morning.

The phenomena of electron emission from solids, the physical properties of electron tubes, and the principles underlying their basic operation.

plications. Prerequisites: Physics 16 or 8 and 55, and a course in d-c and a-c circuits in Physics or Engineering. Material fee, \$11.

138 *Transistor Principles and Circuits* (3)

Not offered 1959-60.

Qualitative description of transistor action, introduction to transistor circuit analysis, low frequency circuits, power amplifiers, high frequency equivalent circuits, video and intermediate frequency amplified design, linear and nonlinear oscillators. Prerequisite: Physics 132 or the equivalent.

153 *Advanced Laboratory in Atomic Physics* (3)

Slack

Spring: Saturday—as arranged.

Prerequisite: Physics 16 or 8, 55. Material fee, \$11.

155 *Advanced Laboratory in Electricity and Magnetism* (3)

Hobbs

Spring: Saturday—as arranged.

Prerequisite: Physics 55, 105. Material fee, \$11.

156 *Advanced Laboratory in Optics* (3)

Spring: Saturday—as arranged.

Prerequisite: Physics 55, 106. Material fee, \$11.

181 *Biophysics* (3)

Jehle

Spring—evening.

Molecular basis of biophysics, biosynthesis, and reproduction. Molecular and genetic aspects of the effects of radiation. Physicochemical equilibria, steady states, and transients in biological systems: order, disorder, and information theory. Admission by permission of the instructor.

191 *Nuclear Reactors* (3)

Fall—evening.

Neutron physics: sources of neutrons, neutron reactions, slowing down and diffusion; introduction to transport theory; fission process; reactor types; basic theory of homogeneous and heterogeneous reactors, including specific numerical studies from recent publications. Prerequisite: Physics 16 or 8; Mathematics 31 or 20.

THIRD GROUP

211 *Classical Physical Theory* (3)

Jehle

Fall—evening.

Dynamics of systems of particles and of rigid bodies, generalized coordinates. Prerequisite: Physics 101; Mathematics 132, 171. (Mathematics 171 may be taken concurrently.)

212 *Classical Physical Theory* (3)

Spring—evening.

Classical nonrelativistic field theory with applications to electromagnetic and hydrodynamic fields. Prerequisite: Physics 105; Mathematics 132, 171.

219-20 *Wave Mechanics* (3-3)

Academic year—evening.

Criticism of classical ideas of mechanics and a formulation of mechanical equations; matrix mechanics and its relation to classical mechanics; application to various problems of atomic, molecular and nuclear physics. Prerequisite: Physics 113, 211, 212.

222 *Quantum Electrodynamics and Field Theories* (3)

Not offered 1959-60.

Relativistic wave equation, quantization of electromagnetic interaction between matter and radiation, elementary particles and their transformations. Prerequisite: Physics 219-20.

227 *Statistical Thermodynamics* (3)

Spring—evening.

Axiomatic formulation of thermodynamics. Thermodynamic potentials and equilibria. The method of Gibbs. Statistical mechanics based on indistinguishability of particles. Bose-Einstein and Fermi-Dirac statistics. Applications to radiation, electron, gases, etc. Prerequisite: Physics 102, 114; Mathematics 132.

255-56 *Graduate Laboratory* (4-4)

Academic year: Saturday—as arranged.

Individual work on special topics. One semester of this course required of all Master's candidates in physics. Students enrolling in this course may begin with Physics 255 or 256. Not open to undergraduates. Material fee, \$11 a semester.

291-92 *Seminar: Recent Developments in Physics* (1-1)

Academic year: alternate weeks—Monday evening.

Individual investigations of special problems. All students required for a Master's degree in physics are expected to attend this seminar during residence for the degree, and to take part in its program. Credit for participation in the seminar work is obtained by registering for this course during the last two semesters of residence. Credit, however, is based upon the seminar work during the period of residence.

299-300 *Thesis* (3-3)

Academic year—as arranged.

Fees to be arranged.

PHYSIOLOGY

Chester Elwood Leese, Ph.D., *Fry Professor of Physiology*
 Charles Adrian Michael Hogben, M.D., Ph.D., *Professor of Physiology, Executive Officer*
 William Rankin Duryee, Ph.D., *Research Professor of Physiology*
 Erich Heinz, M.D., *Research Professor of Physiology*
 Eugene Marshall Renkin, Ph.D., *Associate Professor of Physiology*
 Friedrich Paul Julius Diecke, Dr. rer. nat., *Associate Professor of Physiology*
 Ruth McClintock, Ph.D., *Assistant Professor of Physiology*
 Joseph Frederick Hoffman, Ph.D., *Lecturer in Physiology*
 Gabriel George Nahas, M.D., Ph.D., *Lecturer in Physiology*
 David Platt Rall, M.D., Ph.D., *Lecturer in Physiology*
 Samuel Isay Yamada, Ph.D., *Lecturer in Physiology*
 Magdolna Anne Iranyi, M.D., *Associate in Physiology*
 Saul Winegrad, A.B., M.D., *Associate in Physiology*

SPECIAL LECTURER

Stanley Jay Sarnoff, A.B., M.D., *Chief, Laboratory of Cardiovascular Physiology, National Heart Institute, National Institutes of Health; Cardiovascular Physiology*

Master of Arts or Master of Science in the field of Physiology (Columbia College).—Prerequisite: the degree of Bachelor of Arts or Bachelor of Science, respectively, with a major in Biology, Chemistry, Physics, or Zoology from this University, or the equivalent. The undergraduate work should include introductory zoology, chemistry, and physics. It should be supplemented by further courses in mathematics and science such as calculus, physical and organic chemistry.

Required: the general requirements of Columbia College as stated on pages 91-95. In addition to the thesis, the thirty hours of required work should include Physiology 221 or 222, 231, and at least three credit hours of research (Physiology 295 or 296). Biochemistry 221-22 is required unless it was included in the undergraduate program.

Doctor of Philosophy (Graduate Council).—See page 105.

115 Physiology (3)

Leese

Fall: section A—Tues. and Thurs., 8:45 to 10:00 A.M.; section B—Tues. and Thurs., 5:10 to 6:25 P.M.

Lectures for nonmedical students covering the fundamentals of physiology in its various subdivisions. Prerequisite: one year of general science or one semester of a biological science.

117 *Experimental Physiology* (1)

Fall—Sat., 9:10 to 12:00 A.M.

Laboratory exercises in the fundamentals of physiology for nonmedical students. Prerequisite or concurrent registration: Physiology 115 or the equivalent. Material fee, \$18.

120 *Physiology of Endocrine Activity* (2)

Spring—Tues. and Thurs., 6:10 P.M.

For nonmedical students. The circulatory, metabolic, reproductive, growth, and other adaptations, immediate and long term, accounting and affecting endocrine activity. Prerequisite: Physiology 115 or the equivalent.

130 *The Psycho-physiology of Personality* (2)

Spring—Tues. and Thurs., 5:10 P.M.

For nonmedical students. Lectures on the genesis and expression of personality, with emphasis on the physiological approach. Prerequisite: Physiology 115 or the equivalent and general psychology.

149-50 *Medical Physiology*

Fall—4 hours a week; spring—14 hours a week.

Lectures and laboratory work in all divisions of Physiology. This course is designed for medical students.

211-12 *Problems in Physiology* (arr.)

Academic year—as arranged.

For nonmedical graduate students. Open to undergraduate students with the approval of the Department. Prerequisite: Physiology 115 and 117, or the equivalent.

221-22 *Physiology Seminar* (1-1)

Academic year—1 hour a week, as arranged.

For nonmedical students undertaking graduate work in physiology. Prerequisite: Physiology 115 and 117, or the equivalent.

231-32 *Advanced Physiology* (6-6)

Fall—4 hours a week; spring 14 hours a week, as arranged.

For nonmedical graduate students. Lectures and laboratory work in all major areas of physiology. Physiology 132; material fee, \$2.

241 *Advanced Physiology of the Cell* (1)

Fall—1 hour a week, as arranged

For nonmedical graduate students. Special emphasis on biochemistry and the biochemistry of the cell in relation to organ function.

- 249-50 *Introduction to Medical Research** (3-3) The Staff
 Academic year—Sat. 8:00 A.M. to 1:00 P.M.
 Primarily for graduate students. A comprehensive introduction to the major medical research techniques—statistical, physical, chemical, electrical, and radioisotopic—as applied to biological materials in the medical sciences. Laboratory fee, \$7.50 a semester.
- 269-70 *Pharmacologic Physiology* (1-1) The Staff
 Academic year—one hour a week, as arranged.
 Recent advances in physiology and pharmacology for those interested in research. Open to qualified medical and nonmedical students.
- 279 *Topics in Physiology* (1) The Staff
 Fall—one hour a week, as arranged.
 Review of the active areas of research. Open to qualified medical and graduate students. Prerequisite: Physiology 150 or 232.
- 295-96 *Research* (arr.) The Staff
 Academic year—as arranged.
- 299-300 *Thesis* (3-3) The Staff

* This is an interdepartmental course. The student should register in the department directing the research.

POLITICAL SCIENCE

Warren Reed West, Ph.D., *Professor of Political Science*
 John Withrow Brewer, Ph.D., *Professor of International Law, Executive Officer*
 Wolfgang Herbert Kraus, Dr. Jur., S.J.D., *Professor of Political Science*
 Floyd Millard Riddick, Ph.D., *Professorial Lecturer in Political Science*
 Hugh Linus LeBlanc, Ph.D., *Associate Professor of Political Science*
 Robert Amendt Kinney, A.B., *Associate Professorial Lecturer in Political Science*
 Frederic Siegfried Burin II, Ph.D., *Associate Professorial Lecturer in Political Science*
 Howard Rowland Ludden, A.M., *Assistant Professor of Political Science*
 William Spencer, A.M., *Lecturer in Political Science*
 Charles Henry Slayman, Jr., LL.B., *Lecturer in Political Science*
 Timothy Wadsworth Stanley, A.B., LL.B., *Lecturer in Political Science*
 Arthur Sparrow Banks, A.M., *Lecturer in Political Science*

Bachelor of Arts with a major in Political Science (Columbia College—Departmental).—Prerequisite: the Arts and Letters curriculum in the Junior College as stated on page 70, including Political Science 9-10.

Required: in addition to the general requirements of Columbia College as stated on pages 85-91, thirty semester hours from the following groups distributed as follows: twelve hours from Group A; six hours from Group B; six hours from Group C; and six additional hours from any group or groups. The student will normally complete all six hours of any full-year course which he selects.

Group A: Political Science 111, 112, 117-18, 121-22. Group B: Political Science 171, 172, 181-82. Group C: Political Science 104, 125, 145, 146, 151-52. Group D: 105, 107, 113, 120, 141, 157-58, 162, 177-78, 187-88, 191-92, 194.

Undergraduate students interested in preparing for graduate work in Political Science will consult the Executive Officer of the Department of Political Science for modifications of the above requirements.

Bachelor of Arts with a major in Latin American Civilization (Columbia College—Field-of-Study).—See the Department of History, pages 341-42.

Master of Arts in the field of Political Science (Columbia College).—Prerequisite: a Bachelor of Arts degree with a major in Political Science at this University (or the equivalent major elsewhere) with a B average in the major.

Required: the general requirements of Columbia College as stated on pages 91-95. The thirty hours of required work must be approved in advance by the Adviser.

Master of Arts in the field of Latin American Civilization (Columbia College).—See the Department of History, page 342.

Doctor of Philosophy (Graduate Council).—See pages 103-4.

Bachelor of Arts and Master of Arts in Government in the fields of Foreign Affairs and Public Affairs (School of Government).—See pages 194-96, 200-201.

FIRST GROUP

1 *Introduction to Government** (3)

Ludden

Fall—morning; spring—morning.

Basic principles and problems of political life: theories, forms, and processes of government in the United States and foreign countries. Attention is also given to international relations.

9-10 *Government of the United States** (3-3)

The Staff

First half: fall—morning and evening; spring—morning; summer 1959.

Second half: fall—morning; spring—morning and evening; summer 1959.

First half: structure, powers, and operation of the Federal Government: Congress, the President, and the Supreme Court; elections, political parties, and pressure groups. *Second half:* state and local governments; civil rights; major functions of government at federal, state, and local levels.

SECOND GROUP*

104 *State and Local Governments* (3)

LeBlanc

1959-60 and alternate years: spring—morning; summer 1959.

State, municipal, and other local governmental forms, operations, and problems, with attention to policy formulation and administration, and to the forces of practical politics. Not open to students who have credit for former Political Science 115.

105 *The Governmental Process of the District of Columbia* (3)

LeBlanc

Not offered 1959-60.

Legal structure and political problems of the District of Columbia including restrictions on home rule, Congressional relations, and group politics.

107 *Problems in Modern Political Thought* (3)

Kraus

Spring—morning; summer 1959.

Development of democratic political institutions and analysis of the main challenges to constitutional democracy in the 19th and 20th centuries.

111 *Introduction to Comparative Government* (3)

Kraus

Fall—evening; summer 1959.

Government and politics of the principal constitutional democracies of Western Europe: Great Britain and France.

* Six hours of first-group Political Science courses are prerequisite to all second-group courses.

- 112 *Introduction to Comparative Government* (3) Kra
 Spring—evening.
 Government and politics of the principal political systems of Germany and Eastern Europe: Germany and the Soviet Union.
- 113 *Political Problems of the British Commonwealth of Nations* (3) Kra
 Not offered 1959-60.
 From Colonial Empire to modern Commonwealth: questions of partnership governments and policies in the principal Commonwealth states; problems of new states.
- 117-18 *Political Theory: the Growth of Political Thought in the West* (3-3) Kra
 Academic year—morning.
First half: from Classical Antiquity to the Middle Ages; the forging of the western political tradition. *Second half:* from the Renaissance to the Reformation to recent times. Theoretical foundations of the modern state: morals and politics, sovereignty, absolutism, and resistance to absolutism; liberalism, democracy, and conservatism. Bren
- 120 *Foundations of American Democracy* (3)
 1960-61 and alternate years.
 Introduction to political thought in the United States from colonial times to the end of the Civil War period. Wes
- 121-22 *The Constitution of the United States* (3-3) 121
 Academic year—morning; summer 1959—Political Science
 Judicial power of federal courts in constitutional interpretation. *First half:* emphasis on separation of powers, federal-state relations, and taxation. *Second half:* emphasis on constitutional protection of individual rights. Ridd
- 125 *Legislative Organization* (3)
 1959-60 and alternate years: fall—evening.
 A study of Congress: constitutional aspects, legal analysis of make-up and political organization. Political and parliamentary procedures used in the preparation and enactment of legislation. Not open to students who have credit for former Political Science 124. Bren
- 141 *The Development of Legal Institutions* (3)
 1959-60 and alternate years: fall—morning.
 Introduction to historical jurisprudence: primary attention to the origins of the Roman Law of Continental Europe and of the Anglo-Saxon Common Law.

145 *Political Parties and Politics* (3)

LeBlanc

Fall—morning.

Organization and operations of political parties in the United States: major and minor parties, bosses and corruption, nominations and elections, influence on President and Congress. Not open to students who have credit for former Political Science 116.

146 *Political Pressures and Public Reactions* (3)

Ludden

Fall—morning.

Public opinion, special interest lobbies, and pressure groups as they operate on government to influence public policy.

151-52 *Public Administration* (3-5)

LeBlanc

Academic year—evening; summer 1959.

Introductory survey of the theory and practice of governmental administration and its relation to politics, legislation, the courts, and nongovernmental organizations and interests.

157-58 *Current Problems in Domestic Politics* (1-1)

Slayman

Academic year—evening.

Analysis of outstanding contemporary issues in internal American politics with discussion of problems and policies.

162 *Administrative Law* (3)

LeBlanc

1960-61 and alternate years.

Survey of relationships between administrative and judicial power, with consideration of problems of separation of powers, delegation of power, and administrative power over private rights.

166 *Field Work in Government* (3)

LeBlanc

Fall—as arranged; spring—as arranged.

Practical training in the operation of the Federal Government, based on experience through assignment to selected government offices. Students will have an opportunity to observe and participate in government in the Washington area.

171 *International Politics* (3)

Fall—morning and evening; summer 1959.

Basic forces underlying the conduct of international relations and the formation of foreign policy; power politics, imperialism, collective security, and international cooperation.

172 *International Organization: the United Nations*
(3)

Spring—morning and evening; summer 1959.

Development and current operation of international organization within the system of sovereign states with emphasis on the United Nations.

177 *Recent Trends in Latin American Politics and Government* (3)

Fall—evening.

Types of government, recent developments, and current political conditions in each of the twenty Latin American republics. May not be taken by students who have credit for former Political Science 175.

178 *International Politics in the Western Hemisphere*
(3)

Summer 1959.

Political relations of the American Republics in the 19th and 20th centuries, the development of Pan Americanism and the Organization of American States. May not be taken by students who have credit for former Political Science 175.

181-82 *International Law* (3-3)

Academic year—morning and evening; summer 1959—Political Science 181 (3).

Survey of the public law of nations with emphasis on the law of peace. Neutrality and the so-called law of war receive attention in the second semester.

187-88 *Current Problems in International Politics*
(1-1)

Academic year—evening.

Analysis of outstanding contemporary international issues with discussion of problems and policies.

191-92 *Government and Politics in the Middle East*
(3-3)

Academic year—morning.

First half: international relations and governmental problems of the Arab world and Israel. Second half: international relations and governmental problems of new nations of Central Africa and South Asia.

- 194 *Far Eastern Politics: Contemporary International Relations in the Pacific Area* (3) Kinney

Spring—evening.

Background and development of the major states of East Asia with attention to the constitutional systems and the foreign politics of the region.

- 197 *Proseminar in Foreign Affairs* (3) ———, Kraus

Fall—evening; spring—morning.

Reading and discussion course for coordination and review. Primarily for seniors in the Foreign Affairs major.

THIRD GROUP

- 205-6 *The Federal Executive* (3-3)

1960-61 and alternate years.

First half: nomination and election of the U. S. President, his constitutional and political powers; the cabinet and the Executive Office of the President; the relation of the President to the executive and legislative branches of the government. *Second half:* the practical politics of the presidency, presidential policy leadership and control, the President as party head and as moulder of public opinion.

- 209-10 *Seminar: the Federal Government of the United States* (3-3) West

1959-60 and alternate years: academic year—evening.

Advanced research emphasizing legislative problems of Congress and relations of Congress with the Administration.

- 212 *Seminar: Comparative Government* (3) Kraus

1960-61 and alternate years.

Selected topics and problems on comparative political and administrative institutions and the politics of modern constitutional governments and dictatorships. Each semester is devoted to a selected country or significant institutional or policy problem.

- 213 *Readings in Comparative Government* (3) Kraus

1959-60 and alternate years: spring—evening.

Readings and group discussions on comparative political and administrative institutions with attention to legislatures, the changing role of the executive, political parties, constitutional and totalitarian approaches to public management and public service, the role of the military, etc.

217 *Seminar: Topics in Political Theory* (3)

1959-60 and alternate years: fall—evening.

Research and discussion on problems of modern political and constitutional theory, theoretical aspects of representative government, democracy, socialism, and totalitarianism. Each semester is devoted to a separately announced topic, such as socialism and communism, the theory of resistance and revolution, problems of democratic theory.

220 *Reading Course in Political Theory* (3)

1960-61 and alternate years; summer 1959.

Readings and group discussions, principally on modern political constitutional theory since the 17th and 18th centuries.

271-72 *Problems in International Politics and Organization* (3-3)

Academic year—evening.

A seminar to develop techniques of research in recent international affairs and to examine developments in international politics and organizations.

273 *Public Opinion and Foreign Policy* (3)

Fall—evening.

Development, organization, and operation of international information programs by major world powers. Public opinion in the United States influencing the formation and conduct of foreign policy.

274 *Methods and Objectives of Foreign Policy* (3)

Spring—evening.

Examination of the objectives of foreign policies of the major powers with attention to political, economic, and military methods used to pursue these objectives.

277 *Seminar: Latin American Government* (3)

Fall—evening.

Analysis of the political structures of selected Latin American countries. Two comparable governments studied each year.

278 *Seminar: Latin American Political Philosophy* (3)

Spring—evening.

Research in political personalities and philosophies of 19th and 20th century Latin America.

279 *Reading Course in International Affairs* (3)

Fall—evening; summer 1959.

Reading and discussion of basic materials designed to stimulate

vestigation of problems in the nature and development of international law, politics, and organization.

281-82 *Seminar: International Law and Relations* (3-3) Brewer

First half: summer 1959. *Second half:* spring--evening.

Research topics in the public law of nations, with special attention to problems of pacific settlement, sanctions, war, neutrality, and state jurisdiction, and to their political implications.

292 *International Politics and Government in the Middle East* (3) _____

Spring--evening.

Research and analysis of the international relations and major political problems of the Arab world and adjacent areas.

293-94 *Seminar: International Politics and Government in the Pacific Area* (3-3) Kinney

Academic year--evening.

Research and analysis of the major patterns of development in internal and international politics of the area, with advanced study of the governmental institutions of the Far East.

299-300 *Thesis* (3-3) The Staff

Academic year--as arranged; summer 1959.

COURSE OFFERED IN SPECIAL PROGRAM

In addition to the regular courses announced above the University offers the following course, which is available to students enrolled in the Air Force Advanced Management program only.

287 *American Military Policy* (3) Stanley

Examination of the nature of military policy and its relation to domestic and foreign policy, the historical element, organization within the military establishment for policy making.

PSYCHIATRY

Winfred Overholser, A.B., M.D., Sc.D., L.H.D., *Professor Emeritus
Psychiatry in Residence*

Leon Yochelson, A.B., M.D., *Professor of Psychiatry, Executive*
 Joel Elkes, M.B., Ch.B., M.D., *Clinical Professor of Psychiatry*
 Henry Prather Laughlin, B.S., M.D., *Associate Clinical Professor
Psychiatry*
 Marshall deGraffenried Ruffin, B.S., M.D., *Associate Clinical Professor
of Psychiatry*
 Sidney Berman, B.S., M.D., *Associate Clinical Professor of Psychiatry*
 Morris Kleinerman, B.S., M.D., *Associate Clinical Professor of Psychiatry*
 Elmer Klein, B.S., M.D., *Associate Clinical Professor of Psychiatry*
 Anna Coyne Todd, A.B., M.D., *Associate Clinical Professor of Psychiatry*
 Norman Taub, B.S., M.D., *Associate Clinical Professor of Psychiatry*
 Joseph Eugene Rankin, B.S., M.D., *Assistant Professor of Psychiatry*
 Harold Corson, M.D., *Assistant Clinical Professor of Psychiatry*
 Irving Schneider, M.D., *Assistant Clinical Professor of Psychiatry*
 Anna Genevieve McEldowney, A.B., M.D., *Assistant Clinical Professor
of Psychiatry*
 Sarah Shtoffier Tenenblatt, A.B., M.D., *Assistant Clinical Professor
Psychiatry*
 Irving Schneider, M.D., *Assistant Clinical Professor of Psychiatry*
 David Eden, A.B., M.D., *Associate in Psychiatry*
 Robert Milton Greenberg, A.B., M.D., *Associate in Psychiatry*
 Helen Pallister, Ph.D., *Associate in Psychiatry (Psychology)*
 Christopher Theodore Bever, A.B., M.D., *Associate in Psychiatry*
 Warren Charles Johnson, B.S., M.D., *Associate in Psychiatry*
 Richard Allan Rogers, B.S., M.D., *Clinical Instructor in Psychiatry*
 John Anthony Farrell, M.D., *Clinical Instructor in Psychiatry*
 Wilmer Deaver Kehne, A.B., M.D., *Clinical Instructor in Psychiatry*
 Herman Arnold Meyersburg, B.S., M.D., *Clinical Instructor in Psychiatry*
 Samuel Chrabolowski Gordon, M.D., *Clinical Instructor in Psychiatry*
 Harold Bernard Lehrman, A.B., M.D., *Clinical Instructor in Psychiatry*
 Randolph Adams Frank, A.B., M.D., *Clinical Instructor in Psychiatry*
 Maxwell Boverman, A.B., M.D., *Clinical Instructor in Psychiatry*

- Helen Glick Percy, A.B., M.S.W., *Clinical Instructor in Psychiatry (Social Work)*
 Alan McCulloch Drummond, A.B., M.D., *Clinical Instructor in Psychiatry*
 George Warren Sprehn, M.D., *Clinical Instructor in Psychiatry*
 Norman Charles Rintz, A.B., M.D., *Clinical Instructor in Psychiatry*
 Leslie Schaffer, M.B., Ch.B., *Clinical Instructor in Psychiatry*
 Joseph Lee Sheridan, A.B., M.D., *Clinical Instructor in Psychiatry*
 Leonard J Duhl, A.B., M.D., *Clinical Instructor in Psychiatry*
 George Wilcox Metcalf, M.D., *Clinical Instructor in Psychiatry*

165 *Dynamics of Personality Development*

Berman

Fall—1 hour a week.

An orientation course in the anatomical, physiological, and psychological growth and development of personality. Consideration of characteristics of structure, function, and development of the psyche leading to normal behavior as a basis for the study of the pathological. Evaluation of interpersonal relationships.

178 *Psychopathology*

Rankin

Spring—1 hour a week.

Manifestations and understanding of various mental mechanisms and abnormal reaction-types, preceded by history of development of psychopathology and illustrated with case material.

266 *Psychiatry*

Overholser

Spring—1 hour a week

History, etiology, symptoms, course, and treatment of the major psychoses with emphasis on the dynamics involving the person as a whole.

268 *Demonstration Clinics*

McEldowney, Tenenblatt

Spring—3 hours a week.

Presentation of clinical cases of major mental illnesses and primary behavior disturbances, correlating with Psychiatry 266. Each student examines patients under supervision. St. Elizabeths and D. C. General hospitals.

272 *Psychosomatic Aspects of General Medicine*

Ruffin

Spring—1 hour a week.

Somatic disorders of psychogenic origin. The role of personality reactions in functional and organic disorders.

324 Psychoneurosis

Spring—1 hour a week.

Etiology, psychopathology, clinical aspects, and treatment of various types of psychoneuroses. Medical Conference Room, D. C. Geary Hospital.

431-32 Clinical Clerkship

Three weeks divided service as arranged during academic year.

Supervised examination, diagnosis, and treatment of borderline cases in University Hospital and hospitalized cases in St. Elizabeths Hospital. Conferences for discussion of cases. Application of psychiatric principles to general medical practice stressed. University Hospital Inpatient and Outpatient Psychiatry clinics and St. Elizabeths Hospital.

PSYCHOLOGY

Mitchell Dreese, Ph.D., *Professor of Educational Psychology*
 Thelma Hunt, Ph.D., M.D., *Professor of Psychology, Executive Officer*
 Don Carlos Faith, Ph.D., *Professor of Educational Psychology*
 Henry Furness Hubbard, Ph.D., *Professorial Lecturer in Psychology*
 Margaret Ives, Ph.D., *Professorial Lecturer in Psychology*
 *Curtis Edward Tuthill, Ph.D., *Associate Professor of Psychology*
 Willard Edmund Caldwell, Ph.D., *Associate Professor of Psychology*
 James Norman Mosel, A.M., *Associate Professor of Psychology*
 Eva Mayne Johnson, Ph.D., *Assistant Professor of Psychology*
 Clyde Joe Lindley, A.M., *Lecturer in Psychology*
 Robert Konrad Kahn, Ph.D., *Lecturer in Psychology*
 William Robert Kotapish, A.M., *Associate in Psychology*
 Suzanne Doane Hill, A.M., *Associate in Psychology*

Bachelor of Arts with a major in Psychology (Columbian College—Departmental).—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 70, including Psychology 1, and 4 or 22 or 29.

The general requirements for the degree are stated on pages 85-91. The sixty required semester hours must include twenty-four hours in Psychology in addition to those taken as prerequisites, including Psychology 98, 131, 151 or 171, 191, and 196; Statistics 53; and Physiology 115 or Psychology 118.

Master of Arts or Master of Science in the field of Psychology (Columbian College).—Prerequisite: the degree of Bachelor of Arts with a major in Psychology at this University, or the equivalent.

Required: the general requirements of Columbian College as stated on pages 91-95. Of the twenty-four required semester hours (exclusive of the thesis), a minimum of eighteen must be in third-group courses; a minimum of twelve must be in psychology, including Psychology 201 and 202; twelve may be in related fields approved by the Department.

Master's programs are available in the following fields of concentration: (1) tests and measurements, (2) counseling and guidance, (3) clinical-abnormal, (4) social, (5) personnel, (6) experimental, and (7) personality. For detailed requirements consult the Executive Officer of the Department.

Doctor of Philosophy (Graduate Council).—See page 104.

Bachelor of Arts in Government with a major in Business Administration (Personnel Management option) (School of Government).—See pages 74, 193-94, 197.

Master of Arts in Personnel Administration or Master of Arts in Government with a specialty in Counseling, Psychometrics, or International Communication (School of Government).—See pages 199-202, 203-4, 206.

Master of Arts in Education in the fields of Employee Training and of Guidance (School of Education).—Prerequisite: a Bachelor's degree from an accredited institution and two years of successful teaching experience. The requirements for the degree are stated on pages 181-84.

* On sabbatical leave 1959-60.

FIRST GROUP

1 *General Psychology** (3)

Fall—morning and evening; spring—morning and evening; summer 1959.

The fundamental principles underlying human behavior.

4 *Psychology of Adjustment* (3)

Fall—morning and evening; spring—morning and evening; summer 1959.

Processes involved in the total adjustment of the individual; emphasis on social environment; development in the individual of adjustment techniques.

22 *Introduction to Educational Psychology* (3)

Lindley, F.

Fall—evening; spring—morning; summer 1959.

Consideration of individual and group differences, adjustments, and the psychology of learning in relation to education and training.

29 *Child Psychology* (3)

Fall—evening; spring—morning; summer 1959.

A genetic approach to the study of the child. Special emphasis placed on the socialization process, learning, and the child's view of the world.

98 *Abnormal Psychology* (3)

Fall—morning; spring—morning and evening; summer 1959.

The causes, diagnosis, treatment, and prevention of the various types of maladjustments and mental disorders. Prerequisite: 6 credits in psychology, or 3 credits in psychology and 6 credits in a biological science.

SECOND GROUP†

112 *Adolescent Psychology* (3)

Fall—morning.

Psychological characteristics and problems peculiar to adolescence, with emphasis on applications of psychology to solution of such problems.

* Psychology 1 is prerequisite to all other courses in Psychology.

† Six credits in first-group courses are prerequisite to all second group courses.

- 118 *Physiological Psychology* (3) Hunt
Spring—morning.
Structure, function, and phylogeny of receptors, nervous system, and effectors as mediators of behavior, including drives, learning, and emotions.
- 121 *Educational Psychology* (3) Faith
Fall—as arranged; spring—as arranged.
Advanced course in educational psychology. Admission by permission of the instructor.
- 129 *Introduction to Counseling and Guidance* (3) Dreese
Fall—evening; summer 1959.
A survey of the basic principles, techniques, and procedures as applied to vocational, educational, and personal counseling.
- 131 *Psychological Tests* (3) Hunt, Hill
Fall—morning; spring—evening; summer 1959.
A survey of psychological tests and their more common uses in business, industry, government, law, medicine, and education. Material fee, \$7.
- 141 *Leadership, Group Behavior, and Student Life* (3) Faith
Fall—morning.
A survey of the foundations of leadership, of the factors which underlie effective participation in group activities, and of the interrelations between the student and his university.
- 144 *Personnel Psychology* (3) Hubbard, Mosé
Fall—evening; spring—evening; summer 1959.
The applications of psychology to personnel work in education, business, industry, and government.
- 146 *Problems in Human Relations* (3) Mosé
Fall—morning; spring—morning; summer 1959 (limited to students in the Engineering Administration program).
The application of psychological principles to understanding and improving personal and group relations. Emphasis will be upon case studies and specific problems drawn from life situations, with important attention to supervisory and administrative relationships. Prerequisite: Psychology 1 (or Psychology 145 for students in the special programs).

148 *Psychology of Advertising and Market Research* (3)

1960-61 and alternate years.

The motivational and social dynamics of consumer behavior. Evaluation of the psychological effectiveness of products, media, and advertising and public relations programs. Consideration of current techniques and findings in motivational research.

151 *Social Psychology* (3)

Fall—evening; spring—morning; summer 1959.

The social foundations of attitudes and behavior. Individual adjustment to group situations, such as the family, school, fraternity, occupation. The psychological basis of race prejudice, nationalism, and war.

156 *Psychology of Propaganda and Public Opinion* (3)

Spring—evening; summer 1959.

The psychology of opinion formation, the measurement of opinion, the social determinants of attitudes, the psychological processes in propaganda, the bases of receptivity of propaganda, psychological warfare.

161 *Comparative Psychology* (3)

1960-61 and alternate years.

A lecture course in animal psychology. Covers psychological processes in infrahuman organisms, evolution of behavior, the place of animal experimentation and research in psychology.

162 *Experimental Comparative Psychology* (3)

Fall—as arranged; spring—as arranged.

Opportunity for individual psychological experimentation using animals as subjects. Offered on independent study plan. Prerequisite: Psychology 161 and permission of the instructor.

171 *Psychology of Personality* (3)

1959-60 and alternate years: spring—morning.

Contemporary approaches to the study of personality. Prerequisite: 12 credits in psychology, including Abnormal Psychology.

191 *Experimental Psychology* (3)

Fall—afternoon and evening; spring—afternoon and evening.

The application of experimental methods to various psychological problems. Prerequisite: 12 credits in psychology and an elementary course in statistics. Material fee, \$10.

192 *Problems in Experimental Psychology* (3)

Fall—as arranged; spring—as arranged.

Opportunity for work on individual experimental projects. Prerequisite: Psychology 191 and permission of the instructor.

193-94 *Readings in Psychology* (3-3)

The Staff

Academic year—as arranged; summer 1959—Psychology 193 (3).

Supervised readings on specific topics in psychology, with conferences, for undergraduate majors. Open only to seniors with 18 or more credits in psychology with a quality-point index of 3.00 or higher. Admission by special permission of the instructor.

196 *History and Systems of Psychology* (3)

Caldwell

Fall—evening.

A survey of the contemporary schools of psychology. Prerequisite 12 credits in psychology.

THIRD GROUP*

201 *Seminar: Advanced General Psychology* (3)

Tuthill

Fall—afternoon; spring—evening.

General review of the field for graduate students with an intensive study of selected problems. Required in all graduate programs.

202 *Psychological Research Methods and Procedures* (3)

Fall—evening; spring—afternoon.

Required of all Master of Arts candidates in psychology. Prerequisites: Experimental Psychology and an elementary course in statistics.

205-6 *Field Work in Psychology* (3-3)

The Staff

Academic year—as arranged; summer 1959—Psychology 205 (3).

Supervised field work in agencies providing psychological service. Admission by permission of the Executive Officer of the Department.

207-8 *Readings in Psychology for Graduate Students* (3-3)

The Staff

Academic year—as arranged; summer 1959—Psychology 207 (3).

Supervised readings with conferences on specified topics in psychology. Open only to students who have had course work in the field of the readings.

* Open only to graduate students, except by special permission of Instructor and Executive Officer of the Department.

209 Seminar: Psychology of Motivation (3)

Fall—evening.

A consideration of various theoretical approaches to the psychology of motivation and systematic concepts and experimental findings deriving from each approach.

212 Seminar: Personality Evaluation by Projective Techniques (3)

Spring—evening.

Primary emphasis upon administration and scoring of the Rorschach Test. Prerequisite: Psychology 233.

213 Seminar: Clinical Psychology (3)

Spring—evening.

A study of the clinical applications of nonprojective tests. Prerequisite: Psychology 233.

215 Seminar: Advanced Study of Projective Techniques (3)

Fall—evening.

Primary emphasis upon interpretation of the Rorschach Test. Prerequisite: Psychology 212.

220 Seminar: Abnormal Psychology (3)

Spring—evening.

An intensive study of selected problems in the field of abnormal psychology.

223 Seminar: Learning (3)

Fall—evening.

Covers theories of learning.

225 Seminar: Mental Hygiene (3)

Fall—evening; summer 1959.

A study of mental health problems with special attention to programs of prevention.

226 Seminar: Clinical Psychology of Childhood and Adolescence (3)

Spring—evening.

A survey of behavior and personality disorders.

- 227 *Seminar: Counseling and Guidance* (3) Dreese
Spring—evening.
Recent developments and current problems in vocational, educational, and personal guidance in various types of agencies with particular reference to education. Prerequisite: educational or psychological measurements and Psychology 129 or the equivalent.
- 228 *Seminar: Techniques of Counseling* (3) Dreese
Spring—evening.
An intensive study of the educational and psychological processes involved in counseling interviews. Specific types of vocational, educational, and personal counseling problems will be discussed.
- 229 *Seminar: Occupational and Educational Information* (3) Faith
Spring—evening.
Designed to acquaint vocational and educational counselors with the basic occupational and educational information necessary in counseling. Sources of data and techniques of collecting, analyzing, and disseminating for purposes of guidance.
- 231 *Test Construction* (3) Hunt
Fall—evening.
The principles underlying test construction; statistical techniques in the construction, evaluation, and standardization of psychological, educational, and vocational tests. Prerequisite: a course in tests and measurements and an elementary course in statistics.
- 232 *Research: Test Construction* (3) Hunt
Fall—as arranged; spring—as arranged.
Individual projects in construction and evaluation of psychological, educational, or vocational tests. Prerequisite: Psychology 231 and permission of the instructor.
- 233 *Individual Psychological Testing* (3) Johnson
Fall—afternoon; spring—afternoon.
Instruction and practice in giving of the Binet and Wechsler tests. Prerequisite: an elementary course in tests and measurements. Material fee, \$7.
- 234 *Seminar: Test Theory* (3) Mosél
1959-60 and alternate years: fall—evening.
The theory underlying test development, construction, evaluation, and application; techniques applicable to problems of test construction and development.

236 *Seminar: Analysis of the Individual for Purposes of Counseling* (3)

Fall—evening.

A detailed study of individual analysis techniques with practice in handling such methods. Prerequisite: an introductory course in educational or psychological measurements.

244 *Seminar: Job Analysis and Evaluation* (3)

Summer 1959.

245 *Seminar: Employee Motivation and Morale* (3)

Spring—evening.

Application of the principles of primary group functioning and group-centered administration to the problem of motivating employees, building morale, and strengthening human relations. Emphasis is upon the use of group dynamics in supervision and leadership.

246 *Seminar: Personnel Measurement Techniques* (3)

Fall—evening.

Detailed consideration of interviews, personal data analysis, tests, ratings, and questionnaires in evaluating employability, job performance, and worker morale.

249 *Seminar: Human Engineering* (3)

Spring—evening.

Application of findings and methods of experimental psychology to the design and operation of equipment and man-machine systems. Evaluation of capacities of the operator to information display systems, control mechanisms, work environment, and work methods.

251 *Seminar: Advanced Social Psychology* (3)

Fall—evening.

Current research and theory in social psychology: group dynamics, ego-involvements, action research, and social interaction theories.

254 *Seminar: Group Dynamics* (3)

1959-60 and alternate years: spring—evening.

The experimental study of small groups; autocratic and democratic group climates; interaction process analysis; Lewin's field-theory approach to individual and group processes.

255 *Seminar: Techniques of Opinion and Attitude Measurements* (3)

1960-61 and alternate years.

Methods of attitude measurement (interviews, questionnaires, scale polls) as currently used by private and governmental investigators. The place of attitude studies in schools, industry, government, etc.

261 *Seminar: International Communication* (3) Mosé

1959-60 and alternate years: spring-evening.

The communication process, problems in mass communication, measuring and modifying opinions and attitudes, principles of persuasion, psychological warfare.

272 *Seminar: Theories of Personality* (3) Caldwell

Fall-evening.

A survey of the various theories of personality, with emphasis upon theoretical problems and methodology in the field of personality study.

290-91 *Seminar: Current Research and Theory in Psychology* (3-3) _____

Fall-evening; spring-evening.

A review and discussion of contemporary research and theory in some advanced and specialized field of psychological study, by leaders in the field. The specific topic and instructor for each semester will be announced in advance of the beginning of the semester.

295-96 *Research in Psychology* (arr.) The Staff

Academic year—as arranged; summer 1959—Psychology 295 (arr.).

Individual research by student, carried out under supervision of staff member.

299-300 *Thesis* (3-3) The Staff

Academic year—as arranged; summer 1959—Psychology 299 (3).

COURSE OFFERED IN SPECIAL PROGRAM

In addition to the regular courses announced above the University offers the following course, which is available only to students enrolled in the Engineering Administration program.

145 *Principles of Human Relations* (3)

RADIOLOGY

William Woodrow Stanbro, M.D., *Professor of Radiology, Executive Officer*

Charlotte Patricia Donlan, A.B., M.D., *Assistant Professor of Radiology*

Solomon Rodney Bersack, B.S., M.D., *Assistant Clinical Professor of Radiology*

Harry Jay Kicherer, M.D., *Assistant Clinical Professor of Radiology*

Harry Louis Berman, B.S., M.D., *Assistant Clinical Professor of Radiology*

John Alexander Isherwood, Ph.B., M.D., *Assistant Clinical Professor of Radiology*

Elmer Richard King, A.B., M.D., *Assistant Clinical Professor of Radiology*

Alvin Charles Wyman, A.B., M.D., *Associate in Radiology*

Herman Litwer, M.D., *Associate in Radiology*

Scott Winfield Smith, Ph.D., *Associate in Radiology*

Nan Van Wagenen, B.S., M.D., *Instructor in Radiology*

George Tievsky, B.S., M.D., *Clinical Instructor in Radiology*

Uthai Vincent Wilcox II, M.D., *Clinical Instructor in Radiology*

Charles Malcolm Weber, M.D., *Clinical Instructor in Radiology*

115-16 *Anatomy*

Academic year—as arranged.

Correlation of gross and Roentgen anatomy.

220 *Principles of Radiology*

Spring—1 hour a week.

Lectures and discussions.

313 *Advanced Radiological Diagnosis*

Fall—as arranged.

Lectures and discussions.

421-22 *Clinical Studies*

Students are assigned to the X-ray Department in rotation on a time basis for a specific period.

RELIGION

Joseph Richard Sizoo, A.M., D.D., Litt.D., LL.D., L.H.D., S.T.D.,
Milbank Professor of Religion
 Clifton Earl Olmstead, A.B., Th.D., *Associate Professor of Religion,*
Executive Officer
 Robert Gean Jones, B.D., Ph.D., *Assistant Professor of Religion*
 Charles Duell Kean, A.B., S.T.B., D.D., *Lecturer in Religion*
 David Hirsh Panitz, A.M., Rabbi, *Lecturer in Religion*

Bachelor of Arts with a major in Religion (Columbian College—Departmental).
 —Prerequisite: the Arts and letters curriculum in the Junior College, see page 70,
 or pages 85-91, and 59-60. Required: the general requirements as stated
 on pages 85-91, including a minimum of eighteen semester hours in religion be-
 low and first-group courses.

Master of Arts in the field of Religion (Columbian College).—Prerequisite: an
 undergraduate major in Religion at this University or the equivalent.

Required: the general requirements of Columbian College as stated on pages
 91-95. Of the twenty-four semester hours of required courses (exclusive of the
 thesis), at least twelve must be in third-group religion courses; a maximum of
 nine may be in a closely related field outside the Department of Religion as
 approved by the Department.

Master of Arts in the field of Religious Education (Columbian College).—
 Prerequisite: an undergraduate major in Religion at this University or the equiv-
 alent; the following specific courses or the equivalent: Education 109-110; Psy-
 chology, 1, 22, and 29; Sociology and Anthropology 1; Speech 1 or 11.

Required: the general requirements of Columbian College as stated on pages
 91-95. Of the twenty-four semester hours of required courses (exclusive of the
 thesis), at least six must be in third-group religion courses; a maximum of
 twelve may be in a closely related field outside the Department of Religion as
 approved by the Department.

Doctor of Philosophy (Graduate Council).—See page 103.

FIRST GROUP

9 The Old Testament (3)

Sizoo, Jones

Fall—morning and evening.

A historical and literary approach to the study of the books of the
 Old Testament with special consideration given to the development of
 religious ideas, institutions, and outstanding personalities.

10 The New Testament (3)

Sizoo, Jones

Spring—morning and evening.

A study of the literature of the New Testament from the standpoint
 of occasion, purpose, dominant ideas, and permanent values. Special
 emphasis is on the approach, the structure, and the significance of the
 Gospels and Epistles.

59-60 *History of Religion (3-3)*

Academic year—morning and evening; summer 1959—Religion 59

First half: primitive and ancient national religions; Confucianism, Taoism, Buddhism, Hinduism, and Shintoism—their historical founders, and development of religious thought and culture. *Second half:* Judaism, Christianity, and Islam—analysis of their origin, evolution, and contemporary status.

SECOND GROUP

103 *The Prophets, Their Times and Their Message (3)*

Fall—evening.

The development of prophetism in the Old Testament; cultural, economic, psychological, and religious factors in the movement; elements of lasting value in the prophetic teaching. A few of the prophets will be selected for particular study.

104 *The Life and Thought of Jesus (3)*

Spring—evening.

A comprehensive study of the life and teachings of Jesus as they relate to problems of belief, standards of value, and patterns of life; the significance of the message of Jesus for our own times.

105 *The Life and Thought of Paul (3)*

Fall—morning.

Greek and Hebrew backgrounds of early Christianity, the Roman world of the first century, religious and social conditions affecting the spread of Christianity, the life and journeys of Paul, Paul's teaching and presentation of the Christian faith, the place of the Pauline epistles in the New Testament.

121 *Problems of Western Religious Thought (3)*

Not offered 1959-60.

The nature of religious truth and experience; the existence, character, and activity of God; the predicament of modern man; the problem of evil and suffering; eternal life; science and religion; the meaning of worship; religious views of history.

122 *Christian Ethics and Modern Society (3)*

Not offered 1959-60.

The nature and principles of the Christian life as developed by the Christian community; problems of personal conduct; the application of the Christian standard to family, social, and economic institutions.

- 131 *History of Christianity to the Reformation* (3) Olmstead
Fall—morning.

The rise and expansion of Christianity, the development of Christian thought, the evolution of church organization and worship, the Renaissance and pre-Reformation dissent.

- 132 *History of Christianity since the Reformation* (3) Olmstead

Spring—morning.

The origin and development of Protestantism; the Roman Catholic revival; the status of the Eastern churches; doctrines, worship, expansion, church and state, and relation to modern thought and life.

- 141-42 *Religious Education* (3-3) Jones

Academic year—as arranged.

Principles and practices of religious education in the home, church, and community; basic educational procedures and special techniques; organization and administration of religious education.

- 172 *Religion in American Culture* (3) Olmstead

Spring—morning; summer 1959.

Growth of religious bodies and institutions in American culture, the heritage of religious freedom and diversity, religion and literature, revivalism and education, science and religious thought, divisions and cooperative movements in religion.

THIRD GROUP

- 209-10 *Seminar in Biblical Literature* (3-3) Jones

Academic year—evening.

The development of religious concepts in the Judaeo-Christian tradition.

- 231-32 *Seminar in the History of Christian Thought* (3-3) Olmstead

Not offered 1959-60.

An advanced study of the development of Christian thought from primitive beginnings to the present.

- 241-42 *Seminar in Religious Education* (3-3)

Not offered 1959-60.

Advanced course dealing with some of the major problems in the practice of religious education.

271 *Seminar in American Religious History* (3)

Olmsted

Fall—evening.

Analysis of the main currents in American religious thought.

299-300 *Thesis* (3-3)

The State

Academic year—as arranged.

ROMANCE LANGUAGES AND LITERATURES

Antonio Alonso, A.M., *Professor Emeritus of Spanish in Residence*
Alan Thomas Deibert, A.M., *Professor Emeritus of Romance Languages in Residence*

Merle Irving Protzman, Ph.D., *Professor of Romance Languages*
George Elbert McSpadden, Ph.D., *Professor of Romance Languages, Executive Officer*
Rafael Supervia, Doctor en derecho, *Associate Professor of Spanish*
James Willis Robb, Ph.D., *Associate Professor of Romance Languages*
William Graham Clubb, Ph.D., *Associate Professor of French*
Claude Yves Meade, Ph.D., *Associate Professor of Romance Languages*
Guido Ettore Mazzeo, A.M., *Associate Professor of Romance Languages*
Joseph Louis Metivier, Jr., A.M., *Assistant Professor of Romance Languages*

Bachelor of Arts with majors in (1) French Language and Literature, (2) Spanish American Literature, and (3) Spanish Language and Literature (Columbian College—Field-of-Study).—Prerequisite: the Arts and Letters curriculum in the Junior College.

Required: the general requirements of Columbian College as stated on pages 83-91 and the grade "pass" on the major examination at the end of the senior year. The coordinated field of knowledge upon which the student will be examined includes the political, social, and cultural backgrounds of the literature studied; the writers and their works. Proficiency in the spoken and written language is required. Majors in Romance Languages are strongly advised to study Latin, a knowledge of which is required for graduate work in most institutions. The Department of Romance Languages provides a proseminar in each of the major fields intended to assist the student in his preparation for the major examination.

Master of Arts in the fields of (1) French Language and Literature, (2) Spanish American Literature, and (3) Spanish Language and Literature (Columbian College).—Prerequisite: the degree of Bachelor of Arts in the appropriate field from this University, or the equivalent.

Required: the general requirements of Columbian College as stated on pages 91-95. The thirty hours of required work must include a thesis, for which 12 hours of credit are allotted. The remainder of the program is arranged in consultation with the student's major adviser.

Doctor of Philosophy (Graduate Council).—See page 103.

Bachelor of Arts in Education with teaching fields in French and in Spanish (School of Education).—Prerequisite: the Education curriculum, pages 72-73.

Required: the French option, page 174, or the Spanish option, page 177; the professional courses listed on page 178.

FRENCH

FIRST GROUP

1-2 *First-year French* (3-3)

The Staff

A year course: credit is not given for the first half until the second half is completed.

First half: fall—morning and evening; spring—morning and evening; summer 1959. *Second half:* fall—morning; spring—morning and evening; summer 1959.

For beginners. Pronunciation, conversation, grammar, composition, reading of modern French prose. Aural training, oral practice, electronic language workshop. Workshop fee, \$6 a semester.

3-4 *Second-year French** (3-3)

The Staff

A year course: credit is not given for the first half until the second half is completed.

First half: fall—morning and evening; spring—morning; summer 1959. *Second half:* fall—morning; spring—morning and evening; summer 1959.

Conversation, grammar, composition, reading in modern French prose, oral practice, introduction to French civilization. Prerequisite: French 1-2 or two years of high school French.

9-10 *French Conversation and Composition* (3-3)

The Staff

Academic year—morning and evening; summer 1959.

Prerequisite: French 4 or the equivalent and permission of the instructor. Workshop fee, \$4 a semester.

49 *French Readings for Nonmajor Students* (3)

Clubb

Fall—evening; spring—evening; summer 1959.

Primarily for graduate students preparing for reading examinations. Undergraduates admitted with permission of the instructor. No academic credit for graduate students.

51-52 *Survey of French Literature and Civilization** (3-3)

Deibert

Academic year—evening.

The social, artistic, and cultural background of French civilization. Lectures, recitations, and informal discussions.

* French 3-4 is required, and French 51-52 is recommended, as prerequisite to all second-group courses.

SECOND GROUP*

- 109-10 *Advanced French Conversation and Composition* (3-3) The Staff

Academic year—morning.

Normally diction will receive greater emphasis in the fall semester and style in the spring semester. Prerequisite: French 10 or the equivalent and permission of the instructor.

- 119-20 *French Literature of the Sixteenth Century* (3-3) Protzman

1959-60 and alternate years: academic year—evening.

Prose, poetry, drama, and memoirs of the French Renaissance; Rabelais, Montaigne, Marot, La Pléiade, etc. Class analysis of texts, collateral reading. Recommended: History 120.

- 121-22 *French Literature of the Seventeenth Century* (3-3) Protzman

1960-61 and alternate years.

History, philosophy, criticism, memoirs, letters, eloquence, drama, fiction, poetry. Class analysis of texts; collateral reading.

- 123-24 *French Literature of the Eighteenth Century* (3-3) Deibert

1959-60 and alternate years: academic year—morning.

History, philosophy, criticism, letters, drama, fiction, poetry, the "salons", the idea of progress, the idea of science. Class analysis of texts, collateral reading, lectures on literature and history.

- 125-26 *French Literature of the Nineteenth Century* (3-3) Meade

1960-61 and alternate years.

Romanticism and realism: fiction, poetry, drama, criticism. Class analysis of texts, collateral reading, lectures on literature and history.

- 127-28 *French Literature of the Twentieth Century* (3-3) Clubb

1959-60 and alternate years: academic year—morning.

Fiction, poetry, drama, criticism. Class analysis of texts, collateral reading, lectures on literature and history.

* French 9-8 is required, and French 51-52 is recommended, as prerequisites to all second-group courses.

199-200 *Proseminar: Readings for the Major in French Literature* (3-3)

Academic year—as arranged.

Conferences and group discussions.

THIRD GROUP

227-28 *Seminar in Modern French Literature* (3-3)

1960-61 and alternate years.

Prerequisite: a second-group course in French literature.

229-30 *Seminar in Classical French Literature* (3-3)

1959-60 and alternate years: academic year—as arranged.

Prerequisite: a second-group course in French literature.

239 *Introduction to Romance Philology and Linguistics* (3)

1959-60 and every third year: fall—evening.

Study of principles found in the development of the Romance languages and methods of analysis at the present time. A general course for graduate students in the fields of Romance languages and literature. This course is normally followed by French 249 or Spanish 249.

249 *Old French* (3)

1959-60 and every third year: spring—as arranged.

Phonology and morphology of Old French, with an outline of its development through Vulgar Latin; survey of French literature to the end of the 14th century. Prerequisite: a second-group course in French literature; French 239, *Introduction to Romance Philology and Linguistics*; and an elementary knowledge of Latin.

251-52 *Middle French* (3-3)

A year course: credit is not given for the first half until the second half is completed. Not offered 1959-60.

French literature of the 14th and 15th centuries. Class analysis of texts, collateral reading. Prerequisite: a second-group course in French literature. Knowledge of Old French is desirable.

299-300 *Thesis* (3-3)

Academic year—as arranged.

PORTUGUESE

FIRST GROUP

1-2 *First-year Portuguese* (3-3)

A year course: credit is not given for the first half until the second half is completed.
Not offered 1959-60.

For beginners. Pronunciation, conversation, grammar, composition, reading of modern Portuguese prose.

3-4 *Second-year Portuguese* (3-3)

A year course: credit is not given for the first half until the second half is completed.
Not offered 1959-60.

Conversation, grammar, composition, reading of modern Portuguese prose, oral practice, introduction to Portuguese and Brazilian civilization. Prerequisite: Portuguese 1-2 or the equivalent.

SECOND GROUP

127-28 *Portuguese and Brazilian Literature* (3-3)

Not offered 1959-60.

Evolution of the Portuguese language; outline of the literature of Portugal (fall semester) and Brazil (spring semester). Lectures, readings, written reports. Conducted in Portuguese. Prerequisite: Portuguese 3-4 or the equivalent.

SPANISH

FIRST GROUP

1-2 *First-year Spanish* (3-3)

A year course: credit is not given for the first half until the second half is completed.

First half: fall—morning and evening; spring—morning and evening; summer 1959. *Second half:* fall—morning; spring—morning and evening; summer 1959.

For beginners. Pronunciation, conversation, grammar, composition, reading of modern Spanish prose. Aural training, oral practice in electronic language workshop. Workshop fee, \$6 a semester.

3-4 *Second-year Spanish** (3-3)

A year course: credit is not given for the first half until the second half is completed.

First half: fall—morning and evening; spring—morning; summer 1959. *Second half:* fall—morning; spring—morning and evening; summer 1959.

The Staff

The Staff

* Spanish 3-4 is required, and Spanish 51-52 is recommended, as prerequisite to all second-group courses in Spanish.

Conversation, grammar, composition, reading of modern Spanish literature, oral practice, introduction to Hispanic civilization. Prerequisite: Spanish 1-2 or two years of high school Spanish.

9-10 *Spanish Conversation and Composition* (3-3)

Academic year—morning and evening; summer 1959.

Prerequisite: Spanish 4 or the equivalent and permission of the instructor. Workshop fee, \$4 a semester.

49 *Spanish Readings for Nonmajor Students* (3) Mazzeo, Roy

Fall—evening; spring—evening.

Primarily for graduate students preparing for reading examination. Undergraduates admitted with permission of the instructor. No academic credit for graduate students.

51-52 *Survey of Spanish Literature and Civilization** (3-3) Superio

Academic year—evening.

The social, artistic, and cultural background of Spanish civilization. Lectures, recitations, and informal discussion.

SECOND GROUP*

109-10 *Advanced Spanish Conversation and Composition* (3-3) The Stu

Academic year—morning.

Normally diction will receive greater emphasis in the fall semester and style in the spring semester. Prerequisite: Spanish 10 or equivalent and permission of the instructor.

121-22 *Spanish Literature of the Golden Age* (3-3) Along

1960-61 and alternate years.

Lope de Vega, Calderón; the classic drama, the ballad, lyric poetry. Class analysis of texts, collateral reading, lectures on literature and history.

123-24 *Cervantes: the Prose of the Golden Age* (3-3) McSpade

1959-60 and alternate years: academic year—morning.

Life and works of Cervantes. The *Quixote*, the *Novelas Ejemplares*, and their relationships to other prose works of the age, which are also studied.

* Spanish 3-4 is required, and Spanish 51-52 is recommended, as prerequisites to all second-year courses in Spanish.

- 125-26 *Modern Spanish Literature (3-3)* Alonso, McSpadden
1960-61 and alternate years.
Prose and poetry of the 18th and 19th centuries. Class analysis of texts, collateral readings, lectures on literature and history.
- 127-28 *Contemporary Spanish Literature (3-3)* Supervía
1959-60 and alternate years: academic year—morning.
Prose and poetry of the 20th century. Class analysis of texts, collateral reading, lectures on literature and history.
- 151-52 *The Spanish American Novel (3-3)*
Not offered 1959-60.
Development of the novel in Spanish America. Lectures, collateral reading, and class analysis of texts.
- 155-56 *Spanish American Literature to 1880 (3-3)* Robb
1960-61 and every third year.
The literature of Spanish America from the colonial period to the latter part of the 19th century. Lectures, collateral reading, reports, and class analysis of important works.
- 157-58 *Spanish American Literature since 1880 (3-3)* McSpadden, Robb
1961-62 and every third year.
The literature of Spanish America from 1880 to the contemporary period. Lectures, collateral reading, reports, and class analysis of important works.
- 197-98 *Proseminar: Readings for the Major in Spanish American Literature (3-3)* Robb
Academic year—as arranged.
Conferences and group discussions.
- 199-200 *Proseminar: Readings for the Major in Spanish Literature (3-3)* Alonso, McSpadden
Academic year—as arranged.
Conferences and group discussions.

THIRD GROUP

- 225-26 *Seminar in Spanish Language and Literatures (3-3)* Supervía, McSpadden
1960-61 and alternate years.
Since the topics for Spanish 225-26 vary from year to year, this course may be repeated for credit. Special topics—Unamuno and Ortega y Gasset; problems of pronunciation and intonation.

227-28 *Seminar in Spanish American Literature* (3-3)

1959-60 and every third year: academic year—as arranged.

Trends in the Novel, *cuento*, and essay. Prerequisite: a second-group course in Spanish American or Spanish literature.239 *Introduction to Romance Philology and Linguistics* (3)

1959-60 and every third year: fall—evening.

Study of principles found in the development of the Romance languages and methods of analysis at the present time. A general course for graduate students in the fields of Romance languages and literature. This course normally followed by French 249 or Spanish 249.

249 *Old Spanish* (3)

1959-60 and every third year: spring—as arranged.

Literature and language: *Poema del Cid*, *Libro de Buen Amor*, *Don Quixote*, *Lucanor*, etc.; historical grammar. Prerequisite: a second-group course in Spanish literature; Spanish 239, *Introduction to Romance Philology and Linguistics*; and an elementary knowledge of Latin.299-300 *Thesis* (3-3)

Academic year—as arranged.

SECRETARIAL STUDIES

Mildred Hollander Shott, A.M., *Associate Professor of Secretarial Studies, Executive Officer*

William Hughes Westbrook, A.B., *Associate in Secretarial Studies*

Associate in Arts (Junior College—two-year vocational curriculum in Secretarial Studies).—For curriculum, see pages 74, 77.

Bachelor of Arts in Education with a teaching field in Business Education (School of Education).—Prerequisite: the Education curriculum, pages 72-73.

Required: the Business Education option, pages 171-72 and the professional courses listed on page 178.

FIRST GROUP

1 *Elementary Typewriting* (3) Shott and Staff

Fall—evening; spring—evening.

Fundamental techniques of typewriting, basic styles of business letters, introduction to tabulation, and preparation of general office forms. Laboratory fee, \$7.

2 *Intermediate Typewriting* (3) Shott and Staff

Fall—evening; spring—afternoon and evening.

The business letter and its arrangement, advanced tabulation, manuscript typing, office forms, stencil cutting, and legal documents. Prerequisite: Secretarial Studies 1 or the equivalent; ability to type accurately at 30 words a minute. Laboratory fee, \$7.

11 *Elementary Shorthand and Transcription* (3) Shott and Staff

Fall—morning and evening; spring—evening; summer 1959

A study of the principles of Gregg shorthand correlated with dictation and transcription. Minimum dictation speed of 60 words a minute attained. Laboratory fee, \$3.

12 *Intermediate Shorthand and Transcription* (3) Shott and Staff

Fall—evening; spring—morning and evening.

Review of the principles of Gregg shorthand. Dictation and transcription on general and specialized business subjects. Minimum dictation speed of 80 words a minute attained. Prerequisite: Secretarial Studies 11 or the equivalent; ability to take dictation at 60 words a minute. Laboratory fee, \$5.

15 *Advanced Shorthand, Typewriting, and Transcription* (3)

Fall—morning; summer 1959.

Dictation and transcription involving vocabularies in specific businesses. Minimum speed of 100 words a minute attained in dictation. Prerequisite: Secretarial Studies 12 or the equivalent. Laboratory fee, \$5.

16 *Secretarial Shorthand, Typewriting, and Transcription* (3)

Spring—morning.

Dictation and transcription involving vocabularies used in the business and medical professions. Minimum dictation speed of 120 words a minute attained. Prerequisite: Secretarial Studies 15 or the equivalent. Laboratory fee, \$5.

51 *Business Correspondence* (3)

1959-60 and alternate years: fall—evening; 1960-61 and alternate years: fall—morning.

Development of the technique of effective communication with reference to business letters and forms. Survey and analysis of current business literature.

54 *Secretarial Practice* (3)

Spring—afternoon.

A thorough study of secretarial problems and procedures. Practice in the use of secretarial equipment and supplies. The study of secretarial personality and office relationships.

SLAVIC LANGUAGES AND LITERATURES

Helen Bates Yakobson, B.S., *Associate Professor of Russian, Executive Officer*

Eugene Ernest Pantzer III, Ph.D., *Assistant Professor of Slavic Languages and Literatures*

Vladimir Tolstoy, License in theologie, M.S., *Lecturer in Russian*

Eugene Sergei Serebrennikov, B.S. in Agr., *Lecturer in Russian*

1-2 *First-year Russian* (3-3) Yakobson and Staff

A year course: credit is not given for the first half until the second half is completed.

First half: fall—morning and evening; spring—evening; summer 1959.

Second half: fall—evening; spring—morning and evening; summer 1959.

A beginner's course in fundamentals of grammar and pronunciation with graded reading, oral drill, and written practice. Listening comprehension and oral practice in electronic language workshop. Workshop fee, \$6 a semester.

3-4 *Second-year Russian* (3-3) Yakobson and Staff

A year course: credit is not given for the first half until the second half is completed.

First half: fall—morning and evening; spring—evening. *Second half:* fall—evening; spring—morning and evening.

Systematic review of grammar. Study of special problems of Russian morphology and syntax. Oral and written reports on assigned topics.

9-10 *Russian Conversation* (3-3) Yakobson and Staff

Academic year—evening.

Listening comprehension and oral practice in electronic language workshop. Workshop fee, \$6 a semester.

91-92 *Introduction to Slavic Literature* (3-3) Pantzer

Academic year—morning.

Lecture, recitation, and discussion. A survey of Slavic literature, in translation, from early written and oral forms to the literary masterpieces of the 19th and 20th centuries.

101-2 *Rapid Readings in Russian* (3-3) Yakobson

1959-60 and alternate years: academic year—evening.

Readings and translations of classic and modern literary texts and periodical literature.

103-4 *Scientific Russian* (3-3) Yakobson

1960-61 and alternate years.

Reading and translation of technical texts.

SOCIOLOGY AND ANTHROPOLOGY

Harold Loran Geisert, Ph.D., *Professor of Sociology and Anthropology*
Executive Officer

Carr Bartleson Lavell, A.M., *Associate Professor of Sociology*

Richard Walton Stephens, Ph.D., *Associate Professor of Sociology and Anthropology*

Bachelor of Arts with a major in Sociology and Anthropology (Columbia College—Departmental).—Prerequisite: the Arts and Letters curriculum in Junior College, see page 70, including six hours in first-group courses in Sociology and Anthropology.

Required: in addition to the general requirements of Columbia College stated on pages 85-91, twenty-four semester hours in Sociology and Anthropology which must include 172 and 181 and six hours selected from Sociology and Anthropology 115, 116, 142, 152, 153, 154.

Master of Arts in the field of Sociology and Anthropology (Columbia College).—Prerequisite: the degree of Bachelor of Arts with a major in Sociology and Anthropology in this University, or the equivalent.

Required: the requirements of Columbia College, as stated on pages 85-91. The thirty hours of required work must include a minimum of eighteen third-group courses.

FIRST GROUP

1-2 *Man in Modern Society** (3-3)

First half: fall—morning and evening; spring—morning; summer—morning.

Second half: fall—morning; spring—morning and evening.

Development of culture and personality, the impact of group institutions on man's social behavior. Factors producing social problems; individual, community, national and international dimensions.

51 *Introduction to Anthropology** (3)

Fall—morning; spring—evening.

Physical development of fossil and living man, races of mankind, origin and growth of civilization; the structure and development of human relationships.

SECOND GROUP

115 *Cultural Anthropology* (3)

Fall—morning.

Development of social life and customs in preliterate societies, universals and aspects of culture, theories relating to culture, social structure and personality.

* Sociology and Anthropology 1 or 51 is prerequisite to all other courses in Sociology and Anthropology.

- 116 *Comparative Anthropology* (3) Stephens
Spring—morning.
Cross-cultural analysis of preliterate societies in different areas of the world; patterns of social structure and interaction, and a comparison of preliterate and modern societies.
- 123 *Fields of Social Work* (3)
1960-61 and alternate years.
Introduction to the nature and scope of social work; the development of social work programs; functions of social case work, social group work, and social action.
- 126 *Urban Sociology* (3)
1960-61 and alternate years.
The place of the city in the larger society: growth of the city, problems of urban living, group life, personality, urban housing, and city planning. Includes consideration of suburban development.
- 127 *Community Organization* (3)
Fall—morning.
Principles common to communities throughout the world: social interaction and social disorganization, population growth and community structure, spatial organization, community change.
- 131 *Social Institutions* (3)
1960-61 and alternate years; summer—1959.
Functional analysis of basic social institutions: family, education, religion, and state in the structure of American society.
- 132 *Courtship and Marriage* (3) Lavell
Spring—morning.
Dating and courtship as social processes, reasons for marriage, marriage laws, mate selection, factors in marital adjustment; prediction and counseling.
- 133 *The Family in Modern Society* (3) Lavell
Fall—morning.
Historical development of the family as a social institution, parent-child relations, family problems, disorganization and divorce, and family reorganization.
- 134 *Sociology of Child Development* (3)
1960-61 and alternate years; summer—1959.
Socialization of the child through the home and other social institutions, the changing status of childhood, dependent and handicapped children.

135 *Juvenile Delinquency* (3)

Fall—evening.

Factors producing delinquency, juvenile detention, the juvenile training schools, treatment of offenders.

136 *Criminology* (3)

Spring—evening.

Nature and distribution of crime, police and court systems, prisons and reformatories, treatment and prevention of crime.

141 *Population Problems* (3)

1960-61 and alternate years.

Composition of populations, trends in population growth and population pressure, factors producing population movements, effects of migration, population policies.

142 *Race and Cultural Contacts* (3)

Spring—morning.

The relations between racial, religious, and national groups and the larger society; theories of prejudice, discrimination, trends in minority problems and race issues in the modern world.

151 *Human Relations in Industry* (3)

Fall—evening.

Sociological analysis of work situations, occupational mobility, development of the labor movement, industrial leadership and morale.

152 *Dynamics of Culture* (3)

1960-61 and alternate years.

Factors and processes making for stability and change in culture, the nature of cultural growth, invention, diffusion, and acculturation, and the disintegration and reintegration of cultures.

153 *Culture and Personality* (3)

Fall—morning.

Influences of group membership and cultural conditions on personality; socio-cultural factors in mental health; and the relationship of personality to caste, class, and occupation.

154 *Language and Culture* (3)

Spring—morning.

The nature and significance of human communication, the distribution and dynamics of languages, linguistic changes, the role of language in culture.

161 *Social Stratification: Class and Status* (3)

1960-61 and alternate years.

Nature of class structure, patterns of status, prestige relations in American society, differential class behavior, and analysis of comparative social structure.

162 *Social Movements* (3)

1960-61 and alternate years.

Major contemporary movements examined as aspects of social change and collective behavior. Designed to disclose competing ideologies and to show the way in which social movements develop.

164 *Social Control* (3)

Lavell

Spring-evening.

Informal and formal phases of human control, analysis of methods of control used in modern society and the situations in which they occur, policies and techniques of control.

172 *Contemporary Social Theory* (3)

Stephens

Spring-morning.

Systematic study of the important schools of contemporary sociology, including recent European as well as American developments; an evaluation of the scientific contribution of each school.

181 *Methods of Social Research* (3)

Stephens

Fall-morning.

Analysis of social research techniques and the scientific method; application to social data of the case study, social survey, statistical, sociometric, and experimental methods.

THIRD GROUP

221 *Seminar: Current Trends in Sociology* (3)

1960-61 and alternate years.

Analysis and evaluation of recent developments in sociology, and an appraisal of the role of systematic theory in sociology.

222 *Seminar: Anthropological Theory* (3)

1960-61 and alternate years.

Analysis of the theoretical postulates and assumptions underlying the development of modern cultural and social anthropology.

227 *Seminar: Small Groups (3)*

Fall—evening.

General characteristics of small groups and their measurement, sociology of groups, evaluation of small group theory and other techniques of group research.

228 *Seminar: Mass Communications (3)*

Spring—evening.

The communication process; barriers to communication; structure and function of communication in society; content, control, support, and effects of mass communication.

295-96 *Research (arr.)*

Academic year—as arranged; summer 1959.

299-300 *Thesis (3-3)*

Academic year—as arranged; summer 1959.

SPEECH

Lubin Poe Leggette, A.M., Ed.D., *Depew Professor of Speech, Executive Officer*
 Calvin Weir Pettit, Ph.D., *Professor of Speech; Director of Speech Clinic*
 George Francis Henigan, Jr., Ph.M., *Associate Professor of Speech*
 Edwin Lockwood Stevens, A.M., *Associate Professor of Speech*
 Lee Sheward Bielski, A.M., *Associate Professor of Speech*
 Edith Shores Surrey, A.M., *Lecturer in Speech*
 Fred Wohlwend Stuart, *Lecturer in Speech*
 Andrew Anthony Nilles, A.B., LL.B., *Lecturer in Speech*
 Stanley Louis Berlinsky, Ph.D., *Lecturer in Speech*

Bachelor of Arts with a major in Speech (Columbia College—Departmental).
 —Prerequisite: the Arts and Letters curriculum in the Junior College, see page 70, including Speech 1, 2, 11, 12.

Required: the general requirements of Columbia College as stated on pages 53-91, including the passing of a speech proficiency test early in the program. Speech 101, 121, 154, 175, and a minimum of twelve additional hours in second-year courses in the speech arts or speech science, as approved by the adviser.

Bachelor of Arts with a major in Dramatic Art (Columbia College—Departmental).—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 70, including twelve hours in the basic courses in speech and six hours in English 51-52, 71-72, or 91-92.

Required: the general requirements of Columbia College as stated on pages 53-91, including the passing of a speech proficiency test early in the program. Speech 101-2, a minimum of nine additional hours in theater arts in the Speech Department and nine hours in dramatic literature in the English Department, as approved by the adviser.

Master of Arts in the field of Speech Correction (Columbia College).—Prerequisite: the degree of Bachelor of Arts with a major in Speech from this University, or the equivalent.

Required: the general requirements of Columbia College as stated on pages 91-95.

Bachelor of Arts in Education with a teaching field in Speech (School of Education).—Prerequisite: the Education curriculum, pages 72-73.

Required: the Speech option, pages 177-78, and the professional courses listed on page 178.

FIRST GROUP

A Speech Clinic

Pettit and Staff

Fall—as arranged; spring—as arranged; summer 1959.

Individual or group lessons, without academic credit, for such speech difficulties as lisping, cleft palate, articulatory problems, and stuttering.
 Fee: for individual lesson, \$7; for group lesson, \$4.

B American Speech for Foreign Students (3)

Fall—morning and evening; spring—morning and evening; summer 1959.

Class limited to foreign-born students. Instruction in the formation of the sounds of spoken English, with emphasis on rhythm and intonation. The International Phonetic Alphabet is used. Recording fee, \$2.

Leggette and St...

1 Effective Speaking (3)

Fall—morning, afternoon, and evening; spring—morning, afternoon, and evening; summer 1959.

Preparation and delivery of extempore speeches, developing confidence and poise, body and voice control; selecting and organizing material. Recording fee, \$2.

The Sta...

2 Persuasive Speaking (3)

Fall—morning; spring—morning and evening.

A continuation of Speech 1, which is prerequisite, with emphasis on speech composition and elementary principles of persuasion.

The Sta...

11 Voice and Diction (3)

Fall—morning and evening; spring—morning and evening; summer 1959.

Developing ease, naturalness, and clarity in the speaking voice. Analysis of individual voices through recordings. Phonetic approach to the study of the sounds of English, the standards of speech. Instruction in the problems of rate, volume, pitch, and quality. Recording fee, \$4.

The Sta...

32 Oral Reading (3)

Fall—afternoon; spring—morning and evening; summer 1959.

Reading to others, theory and practice in the problems of interpretation of the printed page. Prerequisite: Speech 11 or the permission of the instructor. Recording fee, \$2.

SECOND GROUP**101 Voice and Phonetics (3)**

Fall—evening.

The International Phonetic Alphabet and its applications to the student's own speech improvement; also personal application to fields as theater, public speaking, speech correction, radio, television, and foreign languages. Recording fee, \$4.

Legg...

102 Oral Interpretation of Literature (3)

Spring—afternoon.

Theory and practice in the problems of communicating meaning and emotion. Selections for study include poetry and prose. Prerequisite: Speech 32 or permission of the instructor. Recording fee, \$2.

121 *Group Discussion and Conference Leadership* (3) Stevens

Fall—morning; spring—evening; summer 1959.

The process of thinking and problem solving in committees and small groups, and the methods of leading discussions and conferences. Prerequisite: 6 hours of speech or the permission of the instructor.

126 *Public Discussion and Debate* (3) Henigan

Spring—afternoon.

Principles and types of public discussion and debate; practice in argumentative speaking on questions of current interest. Prerequisite: 6 hours of speech or the permission of the instructor.

133-34 *Radio and TV Broadcasting* (3-3) Stuart

Academic year—evening.

A study of the development of the radio and TV industries, station organization and management, equipment, production techniques; practice in the preparation and performance of radio programs. Admission by permission of the instructor. Recording fee, \$5 a semester.

141 *Speeches for Special Occasions* (3)

Not offered 1959-60.

The preparation and presentation of speeches for formal occasions with emphasis on the psychology of the audience. Prerequisite: 6 semester hours of speech.

145 *Speech Criticism* (3)

Fall—afternoon.

A study of rhetorical theory with application to the criticism of representative American and British oratory. Prerequisite: permission of the instructor.

153 *Acting* (3)

Fall—evening.

Study and practice in the fundamentals of acting technique. Prerequisite: permission of the instructor. Laboratory fee, \$5.

154 *Play Production* (3)

Spring—evening.

Fundamentals of play production. Under the supervision of the instructor, students prepare one-act plays for presentation. Prerequisite: permission of the instructor. Laboratory fee, \$5.

155-56 *Play Production Practice* (1-1)

Academic year—as arranged.

Practical work in theater.

The Staff

166 *History of the Theater* (3)

Not offered 1959-60.

A general survey of the rise of the theater, the Classical, Medieval, Renaissance, later English and Continental, and the Modern theater. Admission by permission of the instructor.

169 *Creative Dramatics and Children's Theater* (3)

Not offered 1959-60.

A study of creative dramatics and its use as a learning tool, with problems and experience in producing children's plays.

175-76 *Speech Correction* (3-3)

Academic year—evening.

A study of the causes of the disorders of speech with emphasis on methods in diagnosis and treatment of defective speech. Admission by permission of the instructor.

177-78 *Clinical Practice in Speech Therapy* (1-1)

Academic year—as arranged; summer 1959.

Supervised case work in remedial speech—the University Speech Clinic, District of Columbia Crippled Children's Society, and Public School system. This course may be repeated for a total of 6 semester hours. Prerequisite: Speech 175.

182 *Hearing Problems and the Testing of Hearing* (3)

Spring—evening.

A study of the field of audiology with emphasis on the testing of hearing. Admission by permission of the instructor.

183-84 *Clinical Practice in Hearing Therapy* (1-1)

Academic year—as arranged; summer 1959.

Supervised case work with persons handicapped with hearing loss—the University Speech Clinic, the Washington Hearing Society, and the Veterans Administration Audiology Clinic. This course may be repeated for a total of 3 semester hours. Prerequisite: Speech 182.

191 *Proseminar: Speech Correction* (3)

Fall—evening.

THIRD GROUP

276 *Advanced Speech Correction* (3)

Not offered 1959-60.

Prerequisite: Speech 175.

280 *Speech Pathology* (3)

Spring—evening.

An advanced study of the causes and symptoms of the major physiogenic and psychogenic disorders. Admission by permission of the instructor.

284 *Hearing Rehabilitation* (3)

Not offered 1959-60.

Theory and practice in the following aspects of hearing rehabilitation: speech reading, auditory training, and speech conservation. Admission by permission of the instructor.

286 *Seminar in Speech Pathology* (3)

Pettit

Spring—evening.

295-96 *Research in Speech and Hearing* (arr.)

The Staff

299-300 *Thesis* (3-3)

The Staff

COURSE OFFERED IN SPECIAL PROGRAMS

In addition to the regular courses announced above, the University offers the following course, which is available to personnel in the U. S. Navy and Marine Corps only.

111 *Effective Speech Communication* (3)

RELATED COURSES IN OTHER DEPARTMENTS

English 125, *Introduction to English Linguistics*English 135-36, *Shakespeare*English 175-76, *American Drama*English 183-84, *English Drama*Education 133-34, *Observation and Student Teaching in Secondary Schools*

STATISTICS

Frank Mark Weida, Ph.D., *Professor Emeritus of Statistics in Residence*

Everett Hershel Johnson, Ph.D., *Professor of Statistics*
 Harold Frederick Bright, Ph.D., *Professor of Statistics, Executive Officer*
 Solomon Kullback, Ph.D., *Professorial Lecturer in Statistics*
 Howard Livingston Stier, Ph.D., *Professorial Lecturer in Statistics (Engineering Administration Program)*
 Samuel Greenhouse, A.M., *Lecturer in Statistics*
 Morton Kupperman, Ph.D., *Lecturer in Statistics*
 Raymond Edward Thomas, A.M., *Instructor in Statistics*

Bachelor of Arts or Bachelor of Science with a major in Mathematical Sciences (Columbian College—Field of Study).—Prerequisite: the Arts and Letters or the Science curriculum, respectively, in the Junior College, see pages 70 and 71. Electives must include Mathematics 12, 20, and 30; Statistics 91.

Required: the general requirements of Columbian College as stated in pages 85-91, including Statistics 117, 118, 155, 157-58, and six additional hours of second-group statistics courses selected with the approval of the adviser; a minimum of twenty-four semester hours of courses in other departments approved by the adviser as contributing to a well-organized program, and the grade of pass on the major examination at the end of the senior year. For further details, consult the adviser.

Master of Arts or Master of Science in the field of Mathematical Statistics (Columbian College).—Prerequisite: a Bachelor of Arts or Bachelor of Science degree, respectively, with a major in Statistics at this University, or the equivalent.

Required: the general requirements of Columbian College as stated in pages 91-95. The required twenty-four semester hours, in addition to a thesis or projects, include at least twelve hours to be selected from approved advanced courses in Statistics. The remaining twelve hours must be selected in consultation with the adviser.

Doctor of Philosophy (Graduate Council).—See page 105.

Bachelor of Arts in Government or Master of Arts in Government, or Bachelor of Business and Economic Statistics (School of Government).—See pages 175, 194, 199, 200-202, 203.

FIRST GROUP

51 *Introduction to Business and Economic Statistics (3)*

Lecture (2 hours), laboratory (2 hours).

Fall: lecture—morning and evening, laboratory—afternoon and evening.
 Spring: morning and evening, summer 1980.

Survey of elementary principles and procedures for presenting, analyzing, and interpreting statistical data; consideration of characteristic values; measures of variability, sampling processes, index numbers, time series analysis, and simple correlation. Prerequisite: one entrance unit in algebra. Laboratory fee, \$9.

52 *Mathematics of Finance* (3)

The Staff

Lecture (2 hours), laboratory (2 hours).

Fall—morning and evening, spring—morning, afternoon, and evening; summer 1959.

Interest and discount annuities, valuation of stocks and bonds, sinking funds, amortization, valuation of depletable assets, depreciation, building and loan associations. Prerequisite: one entrance unit in algebra. Laboratory fee, \$9.

53 *Introduction to Statistics in Psychology and Education* (3)

The Staff

Lecture (2 hours), laboratory (2 hours).

Fall: lecture—morning and evening, laboratory—afternoon and evening; spring—morning, summer 1959.

Sources of data, tabulation, charts and graphs, averages, dispersion, quartiles and percentiles, raw scores and derived scores, profiles, norms and their use, frequency distributions, non-experimental and other statistics, reliability and validity of tests, normal curve, correlation, elementary sampling, statistical error, limitations of statistics. Prerequisite: one entrance unit in algebra. Laboratory fee, \$9.

91 *Principles of Statistical Methods** (3)

Thomas

Fall: lecture (2 hours), laboratory (2 hours)—evening, summer 1959.

The meaning, uses, and applications of variates and attributes, measurement and enumeration, averages and dispersion, frequency distributions and their characteristics, errors of measurement and their control; purposive and random sampling in theory and practice and their errors and estimates. Prerequisite: one entrance unit in algebra. Laboratory fee, \$9.

92 *Principles of Statistical Methods** (3)

Thomas

Summer 1959.

Correlation theory and applications, power functions, Type I and II errors, introduction to analysis of variance, and the making of statistical decisions. Prerequisite: Statistics 91 or the equivalent. Laboratory fee, \$9.

* Statistics 91 is for Statistics majors, for students in engineering and in the biological and physical sciences.

SECOND GROUP

105 *Statistics in Psychology and Education* (3)

The Staff

Spring. lecture (2 hours), laboratory (2 hours)—morning.

Advanced study of statistical techniques necessary for an application of statistics in research problems. Analysis of variance, correlation techniques, chi-square applications, and sampling theory. Applications to specific problems utilizing case method of study in so far as possible. Original work is required of each student. Prerequisite: Statistics 51. Laboratory fee, \$9.

106 *Factor Analysis* (3)

Bright

Lecture (2 hours), laboratory (2 hours).
Fall—morning.

Matrix theory and linear algebras as applied to factor analysis, introduction to the concepts of factor analysis, their utility in various phases of research. Case method of study applied in so far as possible. Original work is required of each student. Prerequisite: Statistics 51 or the equivalent. Laboratory fee, \$9.

109 *Managerial Statistics* (3)

Not offered 1959-60.

Role of statistics and the contribution of statistical procedures in various phases of business management with emphasis on the need for and usefulness of the statistical method rather than the mechanics of analysis. Subject matter comprises sources and methods for collecting data, effective forms of presentation, techniques for summarizing and analyzing quantitative and qualitative information, interpretation of and inferences from available data. Admission by permission of the instructor or following Statistics 51.

110 *Quality Control Techniques* (3)

Not offered 1959-60.

Characteristics; scientific basis; reduction in cost of inspection, rejection, and tolerance limits; quality as an attribute; distribution of quality characteristics; laws basic to control; statistical and maximum control; detection of lack of control. Admission by permission of the instructor or following Statistics 51.

111 *Business and Economic Statistics I* (3)

Johnson

Fall—morning and evening.

Statistical processes as related to particular types of problems encountered in business administration and economic research. Subject matter comprises characteristic values, measures of variability, sampling processes, sampling distributions, and simple correlation. Admission by permission of the instructor.

112 *Business and Economic Statistics II* (3) Johnson

Spring—morning and evening.

Application of statistical methods to specific problems of business administration and economics. Subject matter comprises multiple and partial correlation, time series analysis, index numbers, business cycles, demand functions, and depreciation schedules. Prerequisite: Statistics 111 or the equivalent.

117 *Analysis of Variance I* (3) Thomas

Lecture (2 hours), laboratory (2 hours).

Fall—evening; summer 1959.

The analysis of variance to segregate factors producing significant variation; a method to estimate experimental error, multiple classifications, Latin Square, Greco-Latin Square, factoring, an introduction to model theory. Applications are stressed. Prerequisite: Statistics 91. Laboratory fee, \$9.

118 *Correlation and the Chi-Square Test I* (3) Thomas

Lecture (2 hours), laboratory (2 hours).

Spring—evening; summer 1959.

A study of simple, partial, and multiple correlation. Rank correlation, the method of contingency, and analysis of covariance. Tests of independence, likeness, and goodness of fit. Applications are stressed. Prerequisite: Statistics 91. Laboratory fee, \$9.

121 *Index Numbers* (3) Johnson

Fall—morning.

Definition and theory of index numbers, methods of construction, their interpretation, use, and limitations. Prerequisite: Statistics 51 or the equivalent.

122 *Business Conditions, Forecasting Principles and Techniques* (3) Johnson

Spring—morning.

Survey and appraisal of techniques for measuring the state of business conditions and an examination of current indicators. Study of procedures for estimating future values, namely, budget requirements, price levels, or level of general business activity. Prerequisite: Statistics 51 or the equivalent.

155 *Mathematical Probability* (3) Greenhouse

Fall—evening; spring—evening.

Definitions, enumeration of cases, total and compound probability, repeated trials, Bayes' theorem and postulate, Bernoulli's theorem, and its experimental verification, mathematical expectation, law of large numbers and its applications. Prerequisite: Mathematics 32 and Statistics 91.

157-58 *Mathematical Statistics* (3-3)

Greenhouse

A year course: credit is not given for the first half until the second half is completed.

Academic year—evening.

Statistics as a science, types of problems, relative frequency and probability, binomial and multinomial distributions, Pearson system of curves, Gram-Charlier series, Cauchy distribution, correlation by regression method, Lexis theory of dispersion, generating functions, simple sampling theory, moments and semi-invariants. Prerequisite or concurrent registration: Statistics 155.

191 *Statistical Mathematics I** (3)

Bright

Fall—evening.

Problems in statistics with the development of processes from modern algebra necessary as a tool for their solution. Prerequisite: Mathematics 10 or the equivalent.

192 *Statistical Mathematics II* (3)

Bright

Lecture (2 hours), laboratory (2 hours).
Spring—evening.

Linear computations as applied to least squares, multiple correlation and regression problems, analysis of variance. Prerequisite: Statistics 191 or the equivalent. Laboratory fee, \$2.

193 *Statistical Mathematics III** (3)

Bright

Fall—evening.

Problems in statistics with the development of processes from analysis necessary as a tool for their solution. Prerequisite: Mathematics 10 or the equivalent.

194 *Statistical Mathematics IV* (3)

Bright

Spring—evening.

Continuation of Statistical Mathematics III. Prerequisite: Statistics 193.

195-96 *Reading and Research in Business and Economic Statistics* (3-3)

Johnson

Academic year—as arranged.

Admission by permission of the instructor.

* Statistics 191 and 193 are prerequisites to all third-group courses.

199-200 *Proseminar: Theoretical and Applied Statistics (3-3)*

Academic year—as arranged.

In addition to the study of recent advances in statistical methods, this course is designed to coordinate the content of the baccalaureate major. Admission by permission of the instructor.

THIRD GROUP*

201 *Design of Experiments (3)*

Not offered 1959-60.

Relative merits of random, repeated, stratified, and double sampling; Fisher-Pitman method of randomization, randomized blocks, Latin squares; factorial design; confounding, partial confounding.

202 *Theory of Estimation and Testing Hypotheses (3)*

Not offered 1959-60.

Statistical hypothesis; maximum likelihood estimate; Markoff's best estimate; Neyman-Pearson theory of testing hypotheses; Bayes' theory; consistent, efficient, and sufficient statistics; theory of confidence intervals.

203-4 *The Theory of Econometrics (3-3)*

A year course; credit is not given for the first half until the second half is completed.

Not offered 1959-60.

Statistical methods applied to analysis of production, supply, and demand; utility and disutility; interest and taxation; exchange. Emphasis on interpretation of results in terms of probability, correlation, and regression of time series. Admission by permission of the instructor.

205-6 *Advanced Business and Economic Statistics (3-3)*

Not offered 1959-60.

Application of statistical methods to specific problems utilizing case method when possible. Emphasis on sound materials, role of statistical methods, techniques of analysis, interpretation and presentation of results. Original work is required of each student. Prerequisite: Statistics 112 or the equivalent.

207 *Operations Analysis (3)*

Not offered 1959-60.

Basic concepts and techniques of operations analysis as applied to problems in business management and economic research. An introduction to the processes of linear programming, game theory, and queuing theory. Admission by permission of the instructor.

* Statistics 101 and 102 are prerequisite to all third-group courses.

211 *Theory of Sampling* (3)

Fall—evening.

Problems of sampling and sample design. Admission by permission of the instructor.

212 *Non-parametric Statistical Inference* (3)

Spring—evening.

Statistical inference when the form of the underlying distribution is unknown; sign tests; rank order statistics; theory of runs; non-parametric discriminant analysis.

217 *Analysis of Variance II* (3)

Not offered 1959-60.

Advanced theory of the applications of the linear hypothesis to research problems. Distributions of the analysis of variance. Extensions to multiple classification with unequal cell frequencies. Studies of multiple contrasts and their importance. Normal versus non-normal problems.

218 *Correlations and the Chi-square Test II* (3)

Not offered 1959-60.

Theoretical analysis of simple, partial, and multiple regression. Examination of various distributions encountered. Rank correlation techniques and their distributions. Distribution of the chi-square statistics.

257-58 *Advanced Mathematical Statistics* (3-3)

A year course: credit is not given for the first half until the second half is completed.

Academic year—evening.

Mathematical basis of distribution functions, moments and cumulant, probability and likelihood, sampling distributions exact and approximate. Chi-square distribution, association and contingency, various conceptions of correlation, individual difference problem, time series regression analysis, analysis of variance, theories of inference.

259-60 *Advanced Mathematical Probability* (3-3)

A year course: credit is not given for the first half until the second half is completed.

Not offered 1959-60.

Modern theories and asymptotic laws, elementary theory of definite integration, limit theorems in probability; the contributions of Cauchy, Frechet, Kolmogoroff, Khintchine. Prerequisite: Statistics 257-58 or the equivalent.

263-64 *Statistical Inference* (3-3)

A year course; credit is not given for the first half until the second half is completed.
Not offered 1959-60.

Sample space; methods for estimating population parameters; financial inference and its application to testing hypotheses, value, efficient, and exact estimation; Student's distribution; variance distribution; sampling statistics, i.e., moments and cumulants used as estimates of population parameters and used to test hypotheses. Prerequisite or concurrent registration: Statistics 257-58 or the equivalent.

265-66 *Multivariate Analysis* (3-3)

A year course; credit is not given for the first half until the second half is completed.
Not offered 1959-60.

Tests of significance, generalized variance and covariance, tests of independence, canonical and vector correlations, multivariate, normal distribution, generalized Student's ratio, problems of estimation, applications to factor analysis.

267-68 *Characteristic Functions* (3-3)

Kullback

A year course; credit is not given for the first half until the second half is completed.
Not offered 1959-60.

Fourier integrals, set functions, inversion formulas, limit theorems, applications to the distribution problem in statistics.

269-70 *Sequential Testing and Statistical Decision Theory* (3-3)

A year course; credit is not given for the first half until the second half is completed.
Not offered 1959-60.

Efficiency of sequential tests, sequential probability ratio test, expected number of observations necessary for a decision, truncated sequential analysis, sequential tests of single and composite hypotheses, general structure of statistical games, invariance principle in statistical games, optimal strategies, estimation for statistical decision.

271-72 *Statistical Information Theory* (3-3)

A year course; credit is not given for the first half until the second half is completed.
Not offered 1959-60.

Basic concepts, definitions and formulas of information theory, their significance and general properties, Shannon's coding theorem, channel capacity, and transmission of information, inequalities of information theory and sufficiency, applications to statistical problems of discrimination and hypothesis testing, asymptotic distribution theory of information; analysis of contingency tables; loss of information due to grouping and sequential analysis, comparison of experiments.

273-74 Stochastic Processes (3-3)

Kullback

A year course; credit is not given for the first half until the second half is completed.

Academic year—evening.

Fundamental notions of stochastic processes; random walks; Markov processes; differential processes; Gaussian processes; applications.

295-96 Reading and Research (3-3)

The Staff

Academic year—as arranged.

Admission by permission of the instructor.

299-300 Thesis (3-3)

The Staff

COURSES OFFERED IN SPECIAL PROGRAMS

In addition to the regular courses announced above the University offers the following courses for students enrolled in the following special programs: Navy Graduate Comptrollership Program, Air Force Advanced Management Program, and Engineering Administration.

101 Basic Principles of Statistical Methods (3)

Variables and attributes, measurement and counting, averages and dispersion, laws and behavior obtained from observation, errors of measurement, and elementary principles of sampling.

119 The Bases of Statistical Decision Making (air.)

Introduction to the techniques of decision making, with emphasis on applications rather than theory. Includes: binomial distribution, normal distribution, Type I and II errors, estimation, research methodology, and problems of inference.

120 Principles of Statistical Analysis (3)

Introduction to the basic concepts of statistical analysis, measures of central tendency, dispersion, normal distribution, basic statistical inference including estimation and testing hypotheses. Examples utilizing actual case studies in so far as possible.

262 Managerial Statistics and Quality Control (3)

The application of statistical principles and practices to management and quality control. Emphasis is placed on the use of statistical techniques in making management decisions, controlling quality and standardization.

SURGERY

- Brian Blades, A.B., M.D., *Professor of Surgery, Executive Officer*
 Arch Lockhart Riddick, B.S., M.D., *Clinical Professor of Surgery*
 John Gordon Lee, A.B., M.D., C.M., Med. Sc.D., *Clinical Professor of Surgery*
 William Stanley McCune, A.B., M.D., *Clinical Professor of Surgery*
 Vincent Michael Iovine, B.S., M.D., *Clinical Professor of Surgery*
 Alec Horwitz, M.S., M.D., *Clinical Professor of Surgery*
 Calvin Trexler Klopp, A.B., M.D., *Warwick Associate Professor of Surgery (Cancer)*
 John Pletch Adams, B.S., M.D., *Associate Clinical Professor of Orthopedic Surgery*
 Howard Clemeth Pierpont, A.B., M.D., *Assistant Professor of Surgery*
 Paul Charles Adkins, A.B., M.D., *Assistant Professor of Surgery*
 Benjamin Franklin Dean, Jr., M.D., M.S., *Assistant Clinical Professor of Surgery*
 Carl Berg, M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Julius Salem Neviasser, A.B., M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Jerome Blaine Harrell, M.D., *Assistant Clinical Professor of Surgery*
 Leonard Theodore Peterson, B.S., M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Gordon Sparks Letterman, B.S., M.D., *Assistant Clinical Professor of Surgery*
 Henry Leon Feffer, A.B., M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 James Richard Thistlethwaite, B.S., M.D., *Assistant Clinical Professor of Surgery*
 Thomas Bradley, A.B., M.D., *Assistant Clinical Professor of Surgery*
 William Ross Morris, M.D., *Associate in Surgery*
 Jacob Joseph Weinstein, B.S., Phar.G., M.D., *Associate in Surgery*
 William Carey Meloy, M.D., M.S. in Med., *Associate in Surgery*
 Edward Alexander Cafritz, M.D., *Associate in Surgery*
 Karl Hayden Wood, Phar.G., D.D.S., *Associate in Dental Surgery*
 Isabella Harrison, A.B., M.D., *Associate in Surgery*
 Nicholas Patrick Dillon Smyth, M.S., M.B., Ch.B., *Instructor in Surgery*
 Richard Kenneth Hughes, A.B., M.D., *Instructor in Surgery*
 Crenshaw Douglas Briggs, B.S., M.D., *Clinical Instructor in Surgery*
 Joseph Francis Conlon, D.D.S., *Clinical Instructor in Dental Surgery*
 Duane Case Richtmeyer, A.B., M.D., *Clinical Instructor in Surgery*
 Leon Gerber, M.D., *Clinical Instructor in Surgery*

- Ernest Alva Gould, B.S., M.D., *Clinical Instructor in Surgery*
 Austin Bertram Rohrbaugh, Jr., A.B., M.D., *Clinical Instructor in Orthopedic Surgery*
 Marvin Hayne Kendrick, A.B., M.D., *Clinical Instructor in Surgery*
 Brooks Gideon Brown, M.D., *Clinical Instructor in Surgery*
 John Decator Hoyle, B.S., M.D., *Clinical Instructor in Surgery*
 Robert Roland Smith, B.S., M.D., *Clinical Instructor in Surgery*
 Norman Harry Isaacs, A.B., M.D., *Clinical Instructor in Surgery*
 Charles Stanley White, Jr., B.S., M.D., *Clinical Instructor in Surgery*
 Dennis Parfremment McCarty, M.D., *Clinical Instructor in Surgery*
 John Mark Keshishian, M.D., *Clinical Instructor in Surgery*
 Maxine Ann Schurter, A.B., M.D., *Clinical Instructor in Surgery*
 Theodore Crandall Allord, A.B., M.D., *Clinical Instructor in Surgery*
 Robert LeRoy Dow, A.B., M.D., *Clinical Instructor in Orthopedic Surgery*
 Louis Robert Perna, A.B., M.D., *Clinical Instructor in Surgery*
 Thomas Mahlon Wright, A.B., M.D., *Clinical Instructor in Surgery*
 David Colwell Wherry, A.B., M.D., *Clinical Instructor in Surgery*

101-2 *Surgical Anatomy I*

Surgery and Anatomy Staffs

Academic year—1 hour alternate weeks, as arranged.

Clinics illustrating relationship between gross anatomy and clinical surgery. University Hospital.

The Staff

280 *Introduction to Surgery*

Spring—1 hour a week.

Lectures and recitations covering the field of general surgery.

The Staff

284 *Surgical Physiology*

Spring—2 hours a week.

A clinical and laboratory course with particular emphasis on applied physiology.

Weiss

323-24 *Surgical Pathology I*

Academic year—1 hour a week.

Weekly conferences are held with the student group assigned to the surgical clerkship, reviewing surgical specimens.

The Staff

373-74 *Clinical Clerkship I*

Academic year—as arranged.

The student is assigned and required to work up thoroughly the cases for diagnosis and treatment. D. C. General Hospital.

- 375-76 *Outpatient Surgical Clinic* The Staff
Forty hours as arranged during academic year.
Surgical clinic. D. C. General Hospital.
- 377 *Fractures and Orthopedics* The Staff
Fall—1 hour a week.
Lectures covering the field of fractures and orthopedics. D. C. General Hospital.
- 379-80 *Lectures in Surgery* The Staff
Academic year—1 hour a week.
D. C. General Hospital.
- 383-84 *Surgical Clinic* Blades
Academic year—1 hour a week.
Demonstration of various surgical diseases to the entire class. University Hospital.
- 473-74 *Clinical Clerkship II* The Staff
Academic year—in rotation
Six weeks, University Hospital; three weeks, Mt. Alto Hospital.
- 479-80 *Surgical Staff Conferences* The Staff
Academic year—Wednesday as arranged.
University Hospital.
- 483-84 *Surgical Ward Rounds* Blades
Academic year—1 hour a week
Demonstration of various surgical diseases to fourth-year clerks. University Hospital.
- 491 *Surgical Anatomy II* Horwitz and Staff
Fall—1 hour a week for twelve weeks in rotation.
Lectures for fourth-year clerks. University Hospital.
- 492 *Surgical Pathology II* Newman
Spring—1 hour a week.
A systematic study of the gross and microscopic changes in the organs and tissues commonly removed surgically.

UROLOGY

Edward Egner Ferguson, M.D., *Associate Clinical Professor of Urology*
 Leon Richard Culbertson, B.S., M.D., *Associate Clinical Professor of Urology, Executive Officer*
 William Dabney Jarman, B.S., M.D., *Assistant Clinical Professor of Urology*
 Gilbert Ottenberg, A.M., M.D., *Associate in Urology*
 Gordon Rhodes MacDonald, B.S., M.D., *Associate in Urology*
 Frederick Turner Reuter, M.D., *Associate in Urology*
 Herbert DeGrange Wolff, Jr., M.D., *Clinical Instructor in Urology*
 Hamilton Peacock Dorman, B.S., M.D., *Clinical Instructor in Urology*
 Arthur Wilets, A.B., M.D., *Clinical Instructor in Urology*
 Herbert Abraham Goldberg, M.B., Ch.B., *Clinical Instructor in Urology*
 William David Oldham, B.S., M.D., *Clinical Instructor in Urology*

395-96 Clinic

Clinical teaching and demonstrations on the care of urological cases with special emphasis on the pre- and post-operative management. Operative clinics and clinical teaching. D. C. General Hospital.

The Staff

397 Urology

Fall—1 hour a week

Lectures covering the entire field of urology including diagnosis, treatment, and morbid pathology.

Culbertson and Staff

495-96 Clinic

Three hours a week, in rotation, as arranged during academic year.

Clinical demonstrations, teaching in the Outpatient Department, and urological X-ray conferences, with special attention given to diagnostic procedures. University Hospital.

Culbertson and Staff

ZOOLOGY*

Ira Bowers Hansen, Ph.D., *Professor of Zoology, Executive Officer*
 Edith Elizabeth Mortensen, Ph.D., *Professor of Zoology*
 Kenneth Casper Kates, Ph.D., *Professorial Lecturer in Zoology*
 Alton Harold Desmond, Ph.D., *Associate Professor of Zoology*

Bachelor of Arts or Bachelor of Science (Columbian College—Field of study).
 —Prerequisite: the Arts and Letters or the Science curriculum, respectively, in the Junior College, see pages 70-71. The following first-group courses must be included: Zoology 1-2 and Chemistry 11-12.

Required: the general requirements of Columbian College as stated on pages 85-91, and the grade "pass" on the Zoology major examination at the end of the senior year. The correlated knowledge upon which the student will be examined includes the following fields: (1) classification, structure, and ecological relations of animals, both invertebrate and vertebrate; (2) embryological development and life histories of important animal types; (3) general principles of physiology, heredity, and evolution; (4) the development of biological principles, hypotheses, and theories as revealed in the study of the history of zoology.

Master of Arts or Master of Science in the field of Zoology (Columbian College).—Prerequisite: the degree of Bachelor of Arts or Bachelor of Science, respectively, with a major in Zoology at this University, or the equivalent.

Required: the general requirements of Columbian College as stated on pages 91-95.

Doctor of Philosophy (Graduate Council).—See page 106

FIRST GROUP

1-2 *Introduction to Zoology* (4-4) Mortensen, Hansen

Academic year: lecture (2 hours)—morning and evening; laboratory (4 hours)—morning, afternoon, and evening; summer 1959.

An introduction to the study of the structure, functions, and relations of animals, and of the fundamental biological principles involved. Material fee, \$11 a semester.

41-42 *Comparative Vertebrate Anatomy* (3-3) Desmond

Lecture (1 hour), laboratory (4 hours).
 1959-60 and alternate years: academic year—morning; 1960-61 and alternate years: academic year—morning and evening.

Lectures on the organ systems of the vertebrates, laboratory dissections of types. Prerequisite: Zoology 2. Material fee, \$11 a semester.

* See also the departments of Biology and Botany

SECOND GROUP

101-2 *Invertebrate Zoology* (3-3)

Lecture (1 hour), laboratory (4 hours).
1959-60 and alternate years: academic year—afternoon; 1960-61 and
alternate years: academic year—evening.

A systematic study of invertebrate forms, including the morphology, classifications, life histories, and phylogenetic relationships. Occasional field trips. Prerequisite: Zoology 1-2 or Biology 1-2. Material fee, \$8 a semester.

Mortensen

105 *Entomology* (3)

Lecture (1 hour), laboratory (4 hours).
1959-60 and alternate years: fall—morning.

A study of the elementary morphology, physiology, and ecology of insects, with an introduction to the taxonomy of the more important groups. Prerequisite: Zoology 1-2 or the equivalent. Material fee, \$8.

Munson

138 *Histology* (3)

Lecture (1 hour), laboratory (4 hours).
1959-60 and alternate years: spring—evening; 1960-61 and alternate
years: spring—afternoon; summer 1959.

An introduction to the microscopical anatomy of normal tissues and organs. Prerequisite: Zoology 1-2 or the equivalent. Material fee, \$8.

Desmond

145 *Introduction to Vertebrate Embryology* (3)

Lecture (1 hour), laboratory (4 hours).
1959-60 and alternate years: fall—evening; 1960-61 and alternate
years: fall—afternoon.

Origin and early development of the individual, formation of organ systems. Emphasis on the frog, chick, and pig, with reference to the human embryo. Prerequisite: Zoology 1 or the equivalent. Material fee, \$11.

Hansen

Mortensen

152 *Protozoa* (3)

Lecture (1 hour), laboratory (4 hours).
1959-60 and alternate years: spring—evening.

Introduction to the protozoa: classification, life histories, and physiology, with special emphasis on free-living types. Prerequisite: Zoology 1. Material fee, \$8.

Kates

150 *Parasitology* (3)

Lecture (1 hour), laboratory (4 hours).
1959-60 and alternate years: spring—evening.

An introduction to the study of animal parasitology, with a survey of parasite types from the protozoa through arthropods. Prerequisite: Zoology 1-2 or the equivalent. Material fee, \$11.

162 *Insect Physiology* (3)

Munson

1959-60 and alternate years: spring—morning.

Lectures and laboratory work on the physiology of insects. Admission by permission of the instructor. Material fee, \$11.

171-72 *Special Problems* (3-3)

The Staff

Academic year—as arranged.

Written approval of the instructor is required. Material fee, \$11 a semester.

199-200 *Proseminar* (3-3)

The Staff

Academic year—morning and evening.

Designed to correlate and supplement the work of Zoology majors.

THIRD GROUP

204 *Seminar in Invertebrate Zoology* (3)

Mortensen

1960-61 and alternate years.

A study of original publications on hormones of invertebrate animals.

214 *Advanced Invertebrate Zoology* (3)

Not offered 1959-60.

Lectures and laboratory work on problems in invertebrate physiology.

Prerequisite: Zoology 1 and 1-1-2 or the equivalent. Material fee, \$8.

247-48 *Morphogenesis* (3-3)

Hansen

1960-61 and alternate years.

Lectures and class reports on experimental morphology. Prerequisite: Zoology 41-42 or the equivalent.

251 *Seminar in Vertebrate Zoology* (3)

Desmond

Fall—evening.

Research (arr.)

The Staff

Academic year—as arranged; summer 1959—Zoology 295 (3).

Investigation of special problems.

299-300 *Thesis* (3-3)

The Staff

Academic year—as arranged, summer 1959—Zoology 299 (3).

STUDENT LIFE

STUDENT LIFE

LIVING ACCOMMODATIONS

The University maintains four residence halls. Meals are served at the Student Union.

Admission to the University does not include a room reservation. A separate application for a room should be made well in advance. Forms for application, together with detailed information, may be obtained from the Director of Activities for Women, Woodhull House, 2033 G Street NW, or the Director of Activities for Men, Building Q, 2029 H Street NW.

Information concerning private rooming and boarding facilities near the University, for women students twenty-one years of age or older and for men students, may be obtained at the Housing Office, Lisner Auditorium. The reservation of rooms in private houses must be made by students.

All girls (except freshmen) under the age of twenty-one, who are enrolled for twelve or more semester hours of academic work at the University and who are not living with their parents or relatives, may live outside the dormitory only with the permission and approval of the Director of Activities for Women, and upon receipt of written requests from parents. In no case will permission be granted for such girls to be domiciled outside the dormitories except with persons approved by the Director of Activities for Women.

Freshman girls may be domiciled outside the dormitory only with their parents or with immediate relatives with the written approval of their parents.

Women Students.—The Hattie M. Strong Hall provides single rooms at \$2.50 a month and double rooms at \$37.50 a month a person.

Dolly Madison Hall provides double rooms at \$35 a month a person.

Men Students.—Welling Hall provides double rooms at \$37.50 a month a person.

John Quincy Adams Hall provides 69 double rooms each with study alcove and bath. Rooms rent at \$40 a month a person.

STUDENT UNION

The Student Union, 2125 G Street NW., is the center for student life. From the cafeteria on the first floor to the reading room on the fourth floor, it is well planned to meet the students' need for meals, study, recreation, and activities. In addition to the recreation lounge and

social lounge the Student Union provides office space for the Student Council and for the other major student organizations.

The Student Activities Office, also in the Student Union, has available information concerning the student organizations and campus events.

HEALTH SERVICES

For details concerning the health service program of the University, see "Health Administration", pages 225-26.

RELIGIOUS LIFE

The University recognizes the contribution that religion makes to the life of its students and encourages them to participate in the various religious organizations of their own choice. Catholic, Jewish, and Protestant bodies sponsor these groups and form a link between the University and the religious community. The advisers of the religious organizations are available for counseling.

UNIVERSITY CHAPEL

The University Chapel is maintained as a nonsectarian service of worship for the University community. The service is held Wednesday of each week from 12:10 to 12:30 o'clock at 1906 H Street NW. Among the guest speakers are representative clergymen of Washington. The Director of Chapel is available for counseling on personal problems.

THE PLACEMENT OFFICE

The Placement Office, 2114 G Street NW., provides assistance to students and alumni seeking full-time, part-time, temporary, or permanent employment. The Office maintains a registry of positions available in many fields, both locally and nationally, and refers qualified applicants for consideration.

Students and alumni interested in placement are asked to register in person at the Office and to select from written descriptions of current openings positions for which they wish referral. Those interested in planning careers are invited to study the information on career fields and the brochures of business and industrial organizations, government agencies, etc., which are on display in advance of campus visits by recruiting officers. The services of the Counseling Center (see pages 229-30) are available to students and alumni wishing career guidance.

The Placement Office is open from 9:00 A.M. to 5:00 P.M., Monday through Friday.

INTERNATIONAL HOUSE

International House, 2110 G Street NW., is the social center for students from foreign countries. A series of teas, dances, and other formal

of entertainment, and the use of club rooms and lounge enable students to become acquainted and feel at home in the University.

The International Students' Society welcomes as members students from other lands as well as North American students.

The Adviser to Students from Foreign Countries, whose office is in International House, is available for advice and guidance.

STUDENT ACTIVITIES

The University offers a comprehensive program of Student Activities planned to provide a variety of social and recreational experiences which complement the academic offerings.

DIRECTORS OF STUDENT ACTIVITIES

The University maintains the offices of the Director of Activities for Men and the Director of Activities for Women, for the guidance of students in all nonacademic phases of student life, such as student activities, social life, and housing. The directors are available for individual counseling concerning personal adjustment to university life.

STUDENT GOVERNMENT

Student Council

The University believes in encouraging the development of a sense of civic responsibility in its students by delegating to them such authorizations. To this end, the organization of the University includes the Student Council, which, under the guidance of the Directors of Student Activities, is responsible for the conduct of all student activities. The Student Council is elected annually by the student body.

Committee on Student Life

The Committee on Student Life is the judicial branch of the student government. It is composed of not more than seven members of the student body, two of whom are the Director of Activities for Men and the Director of Activities for Women, appointed by the President of the University, and the following members: President of the Student Council, an Editor of the *Hatchet*, President of Mortar Board, President of Omicron Delta Kappa, President of the Interfraternity Council, and President of Panhellenic Council. This Committee has the power to review the acts of all student organizations, including the Student Council, and set aside acts that are contrary to established policy and regulations of the University or the Committee.

Approval of Student Organizations.—This Committee is granted authority to approve or disapprove the establishment of any proposed or-

ganization on campus. No student club or society (except social fraternities, sororities, scholastic honor societies, religious or professional clubs or societies) organized as a branch or affiliate of a non-George Washington University organization will be recognized by the Committee on Student Life.

ELIGIBILITY FOR STUDENT ACTIVITIES

Any student registered in The George Washington University is eligible to participate in nonathletic student activities of the University; however, a student having a scholastic average of less than 2.00 is not eligible to be:

1. A member of the Band, Dance Production groups, Enosinian Debate Society, Glee Club, Cheerleaders, Student Council, Religious Council, Panhellenic Council, Interfraternity Council, Engineers Council, Student Life Committee, Adams Hall Council, Madison Hall Council, Strong Hall Council, or any publications staff.
2. An officer, permanent committee chairman, or member of the executive board of any activity.

The rules and policies of the Southern Conference govern participation in intercollegiate athletics.

The control and administration of all student activities are outlined in a separate bulletin called "Rules and Regulations Governing Student Activities."

SPORTS ACTIVITIES

The University is a member of the Southern Conference and the National Collegiate Athletic Association. Its teams participate in intercollegiate contests in football, basketball, baseball, tennis, golf, rifle, sailing, and crew.

The University maintains a complete program of intramural sports for both men and women. The men's program is conducted by the Intramural Council. The Women's Athletic Association and Inter-sorority Athletic Board cooperate with the department of Physical Education in conducting the women's intramural and informal extra-mural sports program in tennis, hockey, basketball, rifle, swimming, golf, bowling, and badminton.

Other sports activities are included in the Fencing Club, Sailing Association, and the Rowing Club.

ARTS

The University offers an opportunity for interested students to participate in dance, drama, forensics, and music through the following organizations: Dance Production Groups I, II, III; Enosinian Debate So-

ciety; University Dramatic Production Group; and University Glee Club. Each of these groups presents programs during the academic year. With the cooperation of the Curator of Art, an annual student art exhibit is presented.

ANNUAL EVENTS

Colonial Program.—The Student Council sponsors a series of ten cultural programs to which all students are invited.

Recreation Program.—The Student Council and the Dance Production Groups arrange dances—square, folk and social—at frequent intervals for all students.

Homecoming.—Scheduled about the middle of the fall semester, homecoming is the primary festive period of the school year. It includes the annual Pep Rally and Variety Show, the homecoming football game, and the homecoming dance.

Holiday Season.—The University traditionally greets the holiday season with appropriate ceremonies including the lighting of the Christmas tree, the singing of Handel's Messiah, and the observance of a special Christmas service at the University Chapel.

The Activities Fair.—Early in the spring semester, all campus activities entertain the freshmen in the Lower Lounge of Lisner Auditorium. Exhibits and demonstrations. Here new students meet older students with similar interests.

Career Conference.—Under the sponsorship of the Student Council, guest speakers from many professions explore annually with students the potentialities of vocations available on graduation.

May Day.—This is the traditional time for the award of honors in student activities. Mortar Board and Omicron Delta Kappa announce and present their new members.

The Colonial Cruise.—An afternoon and evening cruise on the Potomac in the late spring. Students, alumni, and faculty picnic, dance, and engage in games and athletic contests.

STUDENT ORGANIZATIONS

HONOR SOCIETIES

Phi Beta Kappa.—A national honor society recognizing "outstanding intellectual capacity well employed" in the field of liberal arts and sciences. Senior and junior students who are candidates for the degree of Bachelor of Arts or Bachelor of Science in Columbian College (in exceptional cases, senior and junior students in other nonprofessional divisions of the University) and who have shown broad cultural interests, distinguished scholarly achievement, high character, general promise, and scholarly ideals may, to a number not exceeding 15 per cent of a class,

be elected to membership by the Faculty members of the Alpha Chapter of the District of Columbia.

Sigma Xi.—A national scientific honor society, the purpose of which is to encourage original investigation in science pure and applied. Outstanding graduate students in the sciences are eligible for full membership, and undergraduates who have shown marked ability in research may be elected to associate membership.

Alpha Kappa Delta.—A national sociology society.

Alpha Lambda Delta.—A national fraternity established to encourage and reward high scholarship and attainment, membership in which is limited to those freshman women who attain a scholastic average of at least 3.50.

Alpha Omega Alpha.—A national honor medical society.

Alpha Pi Epsilon.—A home economics fraternity.

Arnold Air Society.—A national Air Force ROTC society for advanced cadets.

Delphi.—An intersorority society.

Delta Sigma Rho.—A national forensic society.

Gate and Key.—An intrafraternity society.

Iota Sigma Pi.—A national chemical society for women.

Mortar Board.—A national society for senior college women, stressing leadership, scholarship, and service.

Omicron Delta Kappa.—A national fraternity emphasizing leadership in extracurricular activities.

Order of Scarlet.—A service honorary society for sophomore and junior men.

Order of the Coif.—A national legal society, the purpose of which is to foster a spirit of careful study and to mark in a fitting manner those who have attained a high grade of scholarship. Members are elected each year from the highest 10 per cent of the graduating class of the Law School.

Pershing Rifles.—A national Air Force ROTC society for basic cadets.

Phi Epsilon Phi.—A national botany fraternity.

Phi Eta Sigma.—A national fraternity, established to encourage and reward high scholarship and attainment, membership in which is limited to those freshman men who attain a scholastic average of at least 3.00.

Pi Delta Epsilon.—A national collegiate journalism fraternity.

Pi Gamma Mu.—A national social-science society.

Psi Chi.—A national psychology fraternity.

Rho Chi Society.—A national pharmaceutical society.

Sigma Alpha Eta.—A national speech and hearing society.

Sigma Pi Sigma.—A national physics fraternity.

Sigma Tau.—A national engineering fraternity, the purpose of which is to recognize scholarship and professional attainment.

Smith-Reed-Russell Society.—A scholastic society in the School of Medicine. Students of the third and fourth years who maintain a scholastic average of 86 per cent are eligible for associate membership.

Tassels.—A service honorary society for sophomore women.

William Beaumont Medical Society.—A society founded with the object of encouraging and stimulating medical students in work of individual investigation.

PROFESSIONAL ORGANIZATIONS

Alpha Chi Sigma (chemistry), Alpha Kappa Psi (commerce and economics), Alpha Zeta Omega (pharmacy), American Institute of Electrical Engineers—Institute of Radio Engineers (student chapter), American Pharmaceutical Association (student branch), American Society of Civil Engineers (student chapter), American Society of Mechanical Engineers (student chapter), Delta Theta Phi (law), Kappa Beta Pi (law), Kappa Psi (pharmacy), National Student Education Association, Phi Sigma Nu (medicine), Phi Alpha Delta (law), Phi Chi (medicine), Phi Delta Delta (law), Phi Delta Epsilon (medicine), Phi Delta Gamma (graduate), Phi Delta Kappa (education), Phi Delta Phi (law), Pi Lambda Theta (education), Society for the Advancement of Management (student chapter), Theta Tau (engineering).

SOCIAL FRATERNITIES

Sigma Chi, Kappa Sigma, Phi Sigma Kappa, Sigma Alpha Epsilon, Sigma Phi Epsilon, Phi Alpha, Sigma Nu, Acacia, Tau Kappa Epsilon, Pi Kappa Alpha, Tau Epsilon Phi, Alpha Epsilon Pi, Delta Tau Delta, Kappa Alpha.

SOCIAL SORORITIES

Pi Beta Phi, Chi Omega, Sigma Kappa, Alpha Delta Pi, Delta Zeta, Kappa Delta, Phi Sigma Sigma, Zeta Tau Alpha, Kappa Kappa Gamma, Delta Gamma, Kappa Alpha Theta, Alpha Epsilon Phi.

DEPARTMENTAL CLUBS

Art Club, Case Club, Chemistry Club, El Club Español, Engineers' Council, Enosinian Debating Society, Home Economics Club, Howard E. Kane—A.F.A., King Obstetrical Society, Le Cercle Français, Lester F. Ward Sociological Society, Pharmacy Council, Phi Sigma Rho (philosophy), Schoenfeld Verein, Student Bar Association.

RELIGIOUS ORGANIZATIONS

Baptist Student Union, B'nai B'rith Hillel Foundation, Canterbury Association, Christian Science Organization, Eastern Orthodox Club, Greek Orthodox Organization, Lutheran Student Association, Newman Club, Religious Council, Student Christian Fellowship, Unitarian Club, Wesley Foundation, Westminster Foundation.

STUDENT PUBLICATIONS

Amicus Curiae (Law School publication), *The Cherry Tree* (the annual), *The University Hatchet* (weekly newspaper), *The Georgetown Washington Law Review*, *Mecheleciv* (engineers' publication), *The Percolator* (pharmaceutical publication).

OTHER ORGANIZATIONS

Adams Hall Council, Alpha Theta Nu (scholarship winners), Big Sisters, Cheerleaders, Colonial Boosters, Current Events Club, Flying Sponsors, Interfraternity Council, Interfraternity Pledge Council, International Fraternity Council, International Relations Club, International Students' Society, Junior Panhellenic Association, Madison Hall Council, Old Men, Senior Panhellenic Association, Strong Hall Council, Student Council, Student Legal Aid Society, University Band, Wandering Greeks, Writers' Club.

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THE UNIVERSITY RECORD

SUMMER TERM 1958

FALL AND SPRING SEMESTERS 1958-59

DEGREES CONFERRED

JUNIOR COLLEGE

ASSOCIATE IN ARTS

OCTOBER 18, 1958

Mary Margaret Abell	D.C.	John Lowe	Md.
John M. Adams	D.C.	Barbara Ann Lynch	Mary.
John W. Adams (ret.)		(With distinction)	
John W. Adams Alexander			
John Adams	Ohio	Robert Joseph MacLennan	D.C.
John Adams Backus	Iowa	George Hamilton Marshall	D.C.
John Adams Bacter	D.C.	Claire Sklaroff Marwick	D.C.
John Adams Barto	Fla.	(With distinction)	
John Adams Mark Bayer	D.C.	Ronald Peter Matalavage	Pa.
John Adams	Va.	Mary Amelia Maves	Md.
John Adams Branch	D.C.	Philip Wade McChen	D.C.
John Adams Branch	D.C.	Thomas Adams McDonald	D.C.
John Adams Branch	D.C.	William Herbert Meier, Jr.	D.C.
John Adams Branch	Va.	James Ann Melman	D.C.
John Adams Branch	D.C.	James Meier	Iowa
John Adams Branch	D.C.	Robert Howson Miller, Jr.	D.C.
John Adams Branch	D.C.	David Michael Myers	D.C.
John Adams Branch	Va.	Nancy Davis Myers	D.C.
John Adams Branch	D.C.	Charles Lee Oliver	Pa.
John Adams Branch	D.C.	Robert Louis Orlando	N.Y.
John Adams Branch	D.C.	Janice Marilyn Powers	N.Y.
John Adams Branch	D.C.	William Travis Prater	Calif.
John Adams Branch	D.C.	Lila Kathryn Quirk	Va.
John Adams Branch	D.C.	(With distinction)	
John Adams Branch	Va.	Ralph Gordon Rafter	W.Va.
John Adams Branch	D.C.	(With distinction)	
John Adams Branch	D.C.	Leonard Rafter	D.C.
John Adams Branch	D.C.	Doreen Susan Rubenstein	Md.
John Adams Branch	D.C.	Joseph Ernest Ruckman	Ohio
John Adams Branch	Pa.	Joseph Thomas Sanders	Va.
John Adams Branch	D.C.	Mary Deonice Shattles	D.C.
John Adams Branch	Va.	Thomas Victor Sawyer	D.C.
John Adams Branch	D.C.	Michael Somers	D.C.
John Adams Branch	Fla.	(With distinction)	
John Adams Branch	D.C.	Thomas Richard Spaulding	Ohio
John Adams Branch	D.C.	(With distinction)	
John Adams Branch	Minn.	Robert Sherman Stahl	Md.
John Adams Branch	Calif.	William Edward Stanton, Jr.	Va.
John Adams Branch	Md.	Howard Eric Stet	Md.
John Adams Branch	Md.	Charles Joseph Surprenant	Md.
John Adams Branch	Ohio	Ross Edgar Tammann	Md.
John Adams Branch	D.C.	Samuel Treason, Jr.	Va.
John Adams Branch	Va.	Walter Earle Ulrey	Md.
John Adams Branch	D.C.	Charles Edmund Vann	Va.
John Adams Branch	D.C.	Wallace Hartman Weiss	D.C.
John Adams Branch	D.C.	Ann Weismann	D.C.
John Adams Branch	D.C.	Rita Lee Wertlieb	D.C.
John Adams Branch	Va.	Thomas George Wright, Jr.	Va.
John Adams Branch	D.C.	Sylvia Lee Zuber	Md.

FEBRUARY 23, 1959

Charles Michael Alvarez	D.C.	James Corrine Breakler	Va.
John Adams	Va.	Robert Eric Brumfield	Pa.
John Adams	D.C.	John Adams Brum	D.C.
John Adams	D.C.	Adeline Lonsdale Burns	Va.
John Adams	Va.	Thomas Kanatkar Burkholder	D.C.
John Adams	Va.	Olivia Sebastian Rutland	D.C.

Eleanor Hotchkiss Carter
Stephen Chatterback
Allen Hany Cohen
(With distinction)
Elaine Cohen
Robert Rufus Collins, Jr.
Thursford Crawford Collins
Gavin Francis Cook
Lawrence Alden Cooley
Edward Donald Coxen
Marilee Ann Crockett
Mary Patricia Crown
Renee Michael DeMeth
Harold Bernard Levin
Thomas Ford Denson
Mary Roseanna Dineen
LeRoy Norman DeBour
Frederick Edward Easley
Norman James Engberg
Stuart Martin Engberg
Gail Gertrude Eversman
Melvin Louis Feldman
Margaret Fly Fien
Andrew Morrison Findlay
Craig Lombert Fox
Lauri Belle Foster
Van Barry Franklin
Carol Ann Friel
George Goodwin Fulcher, Jr.
Joan Henry Gersken
Frederick John Gersken
(With distinction)
Linda Ann Gertler
(With distinction)
James Ann Gibson
Harold Gibson
Elizabeth Hanson Gertler
Ruth Ann McDaniel Gerson
(With distinction)
Harold Theodore Hambleton, Jr.
Roberta Jane Harter
Barbara Marie Healy
John Joseph Heberle
Lisa Helwig
Renee Helen Hemminger
Donald Charles Hermon
Nancy Robert Hess
Oscar Donald Huser
(With distinction)
Carl Thomas Hopkins, Jr.
Gloria Anne Huxton
James William Holmes
Judith Rose Hyde
Ruth Graham Ingemann
Barbara Harvey Kaplan
Nathaniel Anthony Kayeoff
Barbara Knight Klein
Nancy Violenta Koch

David Ernest Korman
(With distinction)
Barbara Korman
Charles William Alaska
Joseph Lawrence Abrams
Lyle Allen Arthur
Bernard Ralph Axelrad
(With distinction)
William Gregory Ashby, Jr.
Edward Ralph Baker

Va Mark William Lathin
N.Y. Raymond Miles Lawrenson III
D.C. Roger Allen Lawson
Christina Wanda Lettwiler
Linda Frances Lombert
D.C. Harold Lepetz
Va Nelson Bacon Lyle
Va Aubrey Jackson Lynn, Jr.
Va Merida Natalie Madden
D.C. Anne Louise Maddox
Va Samuel Frank Mamm
D.C. Robert Thomas Manning
Pa Eugene Maronick
Va David Wesley McCloughan
D.C. Elizabeth Ann McQuay
Va Marion Elizabeth McVay
D.C. Richard Marnack Merelman
N.J. Cedric White Merrill
D.C. Sarah Frances Meyers
Va Edward Henry Mince
W.Va Izola Clara O'Connor
D.C. Patricia Ann Parnes
Va Hannah Bernice Peter
D.C. Abraham Benjamin Prager
Va Roger Williams Preston
D.C. Carol Ann Raves
D.C. Victor C. Reed
N.J. Jane Reel VI
Va Mary Jean Reed
D.C. Nora Norrie Ronger
D.C. Franklin Ross
N.Y. Ruth
D.C. Stephen Morton Rudo
Anthony S. Sauer
D.C. Norman Sauer
D.C. Margaret Chabert Sauer
Va Sylvia Victoria Schaefer
D.C. Richard Harvey Schwartz
D.C. Lyle Mary S...
(With distinction)
D.C. Amelia...
N.J. Richard Edward Soren III
Md. William Edward Staute
D.C. Robert...
Pa Charles Tronbridge Stanley
D.C. Michael Paul Stearns
D.C. (With distinction)
D.C. Vito Fanni
Md. James Kershaw Tate
Va Virginia Chloe White
Md. Frances Wynn
Pa Michael Frederick Whitford
Va Judith Marie Wilson
Md. Michael Jay Wilson
Md. Ronald Dean W. Schmidt
Md. Linda Ann Zarin
D.C. Mary Jo Zell

JUNE 3, 1959

D.C. Ann Margaret Barrett
D.C. Elizabeth Catherine Hayes
(With distinction)
N.Y. Clara Marie Bay
N.J. James Ross Belford
D.C. John Foster Barnes III
Va Anne Bane
Md. Anne Margaret Bauman
D.C. Charles James Bomerer
Va Phyllis Rosemary
Md. Ronald W. Belmont

Cameron Leon Pippitt
Dec Anne Ploemen Pletsch
(With distinction)
Arthur Samson Pomerantz
Marcia Diane Porterfield
Elsa Louise Price
John Andrew Prokop, Jr.
Elizabeth Graham Radue
Virginia Margaret Rainey
William Collins Reagan
Penelope Anne Reid
Eunice Fay Rice
Robert Stephen Ridgway
Margaret Elizabeth Robinson
Leslie Ira Rose
Victor Jerome Rosenberg
Florence Petlansky Ruppert
Ruthanne Russell
Constance Zoila Saah
Adelaide Priscilla Salvi
Charles Salzberg
Steven Carl Sandler
Miriam Schachter
Doris Greenfield Schulman
Rosale Ann Schwartzman
Carl Donald Scrivener
Linda Irma Shapiro
Gale Vivian Shaver
Sarah Helen Shelhorse
Kenneth Jerome Silverstone

N.J. Marvin Paul Sireman
Va. Mattie Louise Smith
(With distinction)
D.C. Carl Miller Stangely, Jr.
Va. Robert Duncan Sneed
N.Y. Albert Harry Snyder
Pa. Jean Peacock Sones
D.C. Gregory King Stone
Va. Kate Douglass Storey
Md. Murray Pierre Summers
Va. Marjorie Phyllis Thomas
Wash. Walter Tighe
Ill. Alison Gilchrist Tobias
Va. William Wyatt Trask
D.C. Guerdon Saltonstall Trueblood
D.C. Constantine Harry Tseronis
Va. Carolyn Elizabeth Tucker
Va. William Louis Tushman
D.C. Arthur Richard Vogel
D.C. Robert Lewis Van Deus
Va. Cornelius Rudiger Pius Vogel von
D.C. Vogelstein
D.C. Thomas Ennalls Waggaman III
Md. James Dale Walters
D.C. William Richard Wells
Mass. John Allen Whiting
D.C. Kathleen Zollman Williams
Calif. Richard Andrew Wills, Jr.
Va. Jimmy Dale Woodall
D.C. Linda Elaine Yuter

ASSOCIATE IN SCIENCE

FEBRUARY 23, 1959

Cesar Bustos-Vidal

D.C.

COLUMBIAN COLLEGE

BACHELOR OF ARTS

OCTOBER 18, 1958

Roland Wayne Becker
Frances Nancy Bolland
Wilma Jeannette Bushman
Robert John Ivanitski
Charles Gary Eagan
Meredith Abigail Eagon
Florence Ethel Ekman
(With distinction)
David Allen Ellis
Thomas Martin Garey
Dorothy Dodge Glenn
Janet Verelton Griner
Mary Williams Kearney
James Howard Kelly
Y. K. Kimura
Robert Walter Koenig
W.S. 1954, University of Maryland
Frieda Jay Beck Korman
Robert Marrens
Ruth Marshall

D.C. Patricia Leilani McGoldrick
Md. Amelia Elaine M. Kessie
Ind. Sarah Scott Mammel
Md. Carol Jean Oliphant
Md. Charlene Elizabeth Olson
D.C. (With distinction—Special honors
in Botany)
D.C. Richard Arthur Rubin
(With distinction)
Md. Ernst Schwandt
D.C. Paulo Adolfo Spargnapani
Va. Donald Augustus Swicord, Jr.
Va. Anne Merry Tilden
Md. Inez Mary Tonelli
N.J. Francis Rawle Wadeigh
Japan A.B. 1957, University of Maryland
Pa. John Edgar Wheeler, Jr.
Va. Ruby Isabel Wright
D.C. Otto Manfred Yokum

FEBRUARY 23, 1959

Nancy Abbott
Mary Ann Alderson
Betty Ann Ashmore
James Whitlock Battles
Sally Ann Bele

Va. Anne Caroline Boyer
Md. Minnie Ray Brown
Md. James Richard Calloway
Md. Anita Canine
D.C. Mary Frances Cavanaugh

Degrees Conferred		523	
William I. Chittenden	Va	Sarah Neilson Peck	D.C.
Daniel Stevens Capelli, Jr.	N.J.	Leah Compton Richards	Va
Martha B. Eaton Cunningham	D.C.	Andrew May Ross	Va
Anna Helen Farnes	Md.	Allen Stanley Rowe	Md.
Charles Nader Deverall	Fla.	Theresa Susan Rabinstein	Md.
Anna Lee (Lambert)	D.C.	Ruth Weathers Salomon	D.C.
Robert Warren Haystack	Texas	(With distinction.)	
Frank Hugh Holmes	Md.	William Russell Sarason, Jr.	Va
Charles Lester Hyatt	D.C.	Ann Hoffman S. Scharberg	Mo.
John Victor Jones	D.C.	(With distinction.)	
John W. Keefe	Va	Michael Sanford Sommer	D.C.
John W. Kunkin	N.H.	John Nayler Sweetley	Pa.
John W. L. Landon	D.C.	Peggy Jean Terry	Mo.
James A. L. Landon	Va	Zola Lee Teter	Md.
James A. L. Landon	Calif.	Peter Joel Edgar Thorsteinsson	Ill.
James A. L. Landon	D.C.	Beth Ann Van Wert	Va
James A. L. Landon	Ill.	Daniel Edward Wasserman	Va
James A. L. Landon	D.C.	Janet Mary Weaver	Md.
James A. L. Landon	Va	Donald Philip Whitworth, Jr.	D.C.
James A. L. Landon	Mass.	Doris Estes Woolley	Mass.
James A. L. Landon	Pa.		

JUNE 3, 1959

Md.	Annie Juliet Gilbert	Va.
N.H.	Annette Faxon Kemper	D.C.
Va.	Frances Zaida Goldstein	Md.
D.C.	James Lee Goodell	Va.
Wash.	Gertrude Agnes Graham	D.C.
D.C.	(Special Issues of Psychology)	
Va.	Robert Julius Grier	Ga.
Mass.	Frederick Howard Griffith	Va.
D.C.	Samuel Emerson Hall	Tenn.
	Charles Leonard Hinkle	Conn.
Calif.	Constance E. Lathrop Harden	W.Va.
Md.	Richard Allen Harborth	Va.
D.C.	Marion Chandler Hart	D.C.
D.C.	(With Annotations)	
Va.	Margaret Jean Haynes	Va.
D.C.	Robert Kenneth Haycraft	Md.
D.C.	John Hugh Henry	A.K.
Calif.	George Samuel Hessel	Md.
Wash.	George Morris Hines	Va.
D.C.	William Ray Hinkle	Ga.
Va.	Hanna Kerttula Hirsch	D.C.
Md.	Frances Margaret Jernighoff	Va.
D.C.	Frances Jernighoff	Md.
Md.	Edith Susan Jones	D.C.
N.J.	William Jerome Kook	I.C.
Calif.	Sue Jar Kruza	Kruza
D.C.	Renold Robert Lambert	D.C.
D.C.	Frederic Lantieri	D.C.
Va.	Richard Maynard Lawner	Va.
N.I.	Margaret Ann Lawton	D.C.
Iowa	Katherine Harriet Lazerson	Va.
D.C.	Ronald Latta Lister	D.C.
D.C.	Janet K. Little Lister	D.C.
D.C.	Robert Louis Lister III	Va.
D.C.	Sarah Anne Linton	Va.
D.C.	Harnes K. Linton Mahoney, Jr.	Fla.
Md.	Judith Marie Mahoney, Jr.	Ia.
Ill.	Richard Thomas Manning	D.C.
Va.	Ruth Fitch McAlister	Mass.
Va.	Thomas McAlister McAlister	Va.
D.C.	Miss Charles McAlister	D.C.
	John Elmer McAlister	D.C.
Ind.	Louise Jean McAlister	Mass.
	Mona K. McAlister	D.C.
D.C.	(With Annotations)	
N.J.	Thomas Eugene McAlister	Va.
Mass.	Sarah Louise McAlister	Conn.
Calif.	Mary Frances McAlister	Va.
	Twice Esther Neville	Va.

Nancy Jo Nielsen
Joseph Francis Nizard II
June Anne Nordahl
Gerald Woodard O'Donnell
George Ostrow
Suzuki Oyato
Anna Dolores Osoy
Gail Maria Dondan Parker
Indley James Parks, Jr.
William Henry Patterson, Jr.
Frank Jay Pavlier
J. Anne Argynio Phelan
Stanley Samuel Pinner
(With distinction)
Jose C. Pilot
William Hoover Pinton
William Alfred Pope II
Robert David Popper
Helen David Pynden
David Leon Rappaport
Ralph Gordon Reuter
(With distinction)
James Francis Reilly
Joel Alyn Relais
Charles Robert Ritchie
Ernest Bernard Robinson
B. Ch. E. 1955 Catholic University
of America

D.C. Fannie Maurgen Root
Mass. Martha Bernard Rosenzky
N.J. Warren Schabata, Jr.
Md. Stephanie Esther Sels
D.C. Minnie Anne Sorenson
Va. Miriam Samers
Pa. (With distinction)
N.J. Thomas Richard Spauldin
D.C. (With distinction)
Va. Shelia Susskind
Md. Martin Lawrence Sullivan
D.C. Jack Randolph Tapp
Md. Martha Jo Tapp
Md. Ramon Herman Tamar
D.C. Carol Louise Tamm
Va. Robert Henry Truette
Md. Samuel Weinstein
Md. Donald Christian West
Va. Mary Elizabeth Williams
W.Va. Jane VandeGraft Woods
Md. Jane Bennett Winter
Texas. Sidney Simon Wiesel
Md. Lucille Mae Wiest
D.C. Duane Kathryn York
Texas. Audrey Martin Zaslowsky

BACHELOR OF SCIENCE

OCTOBER 18, 1958

James Walter Bowling
Paul Thoms Cardeilhac
D.M.V. 1954 Agricultural and
Mechanical College of Texas

W.Va. Grant Campbell Edwards
Texas. Warren William Froyd
Barry Modlin

FEBRUARY 23, 1959

Philip Everett Batley
Pierre Marcel Bourque deMarelo
Robert Lee Dale
(With distinction)
George Cloud Murray

Va. John Francis Rollence
Brazil. Anastasios H. G. Sotiropoulos
Calif. Jack Louis Thomas
Md. Leonard Wartoski
Elizabeth Ann Williams

JUNE 3, 1959

Robert David Brown
Robert Sydney Chabot
Leon Pope Dondan
Elizabeth Sylvia Eiler
Frank Michael Gagliardi
William Bernard Gannon
Jack Walter Harvey
Melbourne Catherine Houser
Ormond Wilfrid George Hesley
(With distinction)
Robert Warren Hinson II
Charles Jacobus Hoffmann
Harold Eugene Hurling
Karen Ursula Kuebler
(Special honors in Chemistry)
Ronald Daniel Langer
Leon Stuart Mandelbaum
Kenneth L. Miners, Jr.
(With distinction)

Mass. Faye Gae Nicksa
Md. Phyllis M. O'Connell
Md. Paul Campbell Lukas
Va. John Raul VI
Va. Neil Lynn Reid
D.C. Deborah Allen Renick
Md. Deborah Louise Schietema
Md. Ronald Smith
D.C. Jennifer Molly Soren
Md. David Perry Steinmann
(With distinction)
Va. Alberta Williams Vincent
D.C. Franklin Nelson Wadner
Va. Robert Marion Wagon
(With distinction)
N.Y. Wesley Luke Wice
D.C. David Eric Zwerger

MASTER OF ARTS

OCTOBER 18, 1958

OCTOBER 18, 1958				
Robert Williams, Bell				
A.B. 1944, The George Washington	Va	Paul John Mink		D.C.
State, Arlington		A.B. 1944, University of Pittsburgh		
State, Arlington		Carl Wynn Mink		Va
A.B. 1947, The George Washington	Va	A.B. 1949, Emory and Henry College		
State, Arlington		Gregory Stanton Robinson		MD
Emory and Henry College		A.B. 1947, The George Washington		
Emory and Henry College		University		
Emory and Henry College	Va	John Anthony Simpson		Va
Emory and Henry College		A.B. 1947, University of Maryland		
Emory and Henry College		Dan Lee Wootch		D.C.
Emory and Henry College	Mass	A.B. 1947, The George Washington		
Emory and Henry College		University		
Emory and Henry College	Va	Dick Raymond Wind		D.C.
Emory and Henry College		A.B. 1947, New York State College		
Emory and Henry College	D.C.	for Teachers' Agency		

FEBRUARY 23, 1959

FEBRUARY 23, 1959				
Al	Henry Asper			
Al	Washington Mississippi	D C	Arthur Mann	Green
Al	Wm Beale		A B 1951 The George Washington University	
Al	The Gospel	S C	Harry Moffat	D C
Al	Washington, D.C.		A B 1951 The George Washington University	
Al	The George Washington University	D C	William Vernon Van Fleet	Mid
Al	Clifford Ewing		A B 1951 The George Washington University	
Al	The George Washington University	Mid	William Vernon Van Fleet	D C
Al	St. John's College	Va	A B 1951 The George Washington University	
Al	The George Washington University	D C	William Vernon Van Fleet	D C
Al	Mark Robert Johnson	Va	Leanne Thomas Wright	Wa
Al	University of Alabama		A B 1951 The George Washington University	

JUNE 3, 1959

JUNE 3, 1959			
PA	David Richard Miller		MD
MD	A.B. 1918, The George Washington University		
VA	Harold M. Perry		ILC
MD	A.B. 1914, The George Washington University		
MD	Elizabeth Katherine Newman		Calif
VA	A.B. 1917, University of California		
ILC	Thomas Robert Newman		
ILC	A.B. 1905, Cornell University of America		
DC	George Benjamin Tennessee		DC
VA	A.P. 1915, The George Washington University		
DC	Voltaire Louis Thompson		DC
Miss.	A.B. 1944, Howard College		
VA	A.M. 1949, Georgetown University		
NY	Samuel A. Thompson		VA
NY	A.B. 1911, The George Washington University		
India	Donny Loring Vail		Mass
VA	A.B. 1945, The George Washington University		
VA	Geor. Thomas Washel		Mass
VA	A.B. 1944, College of St. Catherine		
VA	Harold Thompson, Jr.		MD
	A.P. 1905, University of New Mexico		

MASTER OF SCIENCE OCTOBER 18, 1958

James Ray Albers
B.S. 1956, State College of Washington
Andrew John Gabler
A.B. 1956, The George Washington
University

Wash. Gerald Ivan Sugarman
D.C. B.S. 1957, The George Washington
University
Elden Cole Whipple, Jr.
B.S. 1956, Wheaton College
Paul L. Zubkoff
A.B. 1956, University of Buffalo

FEBRUARY 23, 1959

W. Morn Charles Bernick, Jr.
A.B. 1958, Ohio Wesleyan University
James Richard Burke, Jr.
B.S. 1956, University of Maryland
Herbert Donald Heston
B.S. 1956, University of Maryland
Donald Joseph Hornum
B.S. 1957, The George Washington
University
Eva I. Metzger
B.S. 1958, Queens College

D.C. Abul Bayan Mujtoba Naqiyyullah
B.Med. and Surg. 1955, University of
Dacca
Md. Thomas Elijah Smith
B.S. 1958, Benedict College
Md. Lillemor Elena Spisak
B.S. 1958, The George Washington
University
N.Y. Norman Aaron Walensky
B.S. 1957, Muhlenberg College

JUNE 3, 1959

Alexander Johann Faruqi
B.S. 1958, The George Washington
University
Marion Louise Gaffey
B.S. 1958, University of Minnesota
William Donaldson Goetz
B.S. 1958, The George Washington
University
William Harvey Jettama
B.S. 1958, Duke University
Julia Van Vleet Johnson
B.S. 1958, American University

D.C. Constant Raymond Knight
B.S. in Ed. 1958, University of Utah
Md. Morton Levitt
B.S. 1958, College of the City of
New York
Md. B.S. in Phil. 1957, Fordham University
Phyllis Carson West
A.B. 1958, American University
N.C. William Karl Young, Jr.
B.S. 1956, University of Maryland

THE SCHOOL OF MEDICINE DOCTOR OF MEDICINE

JUNE 3, 1959

Arnold Benjamin Barr
(With distinction)
A.B. 1956, The George Washington
University
Alan Benoit Baston
A.B. 1958, University of California
at Los Angeles
Edward Andrew Belsky
Samuel Michael Binsky
A.B. 1958, University of Rochester
John Robert Bosters, Jr.
Edward Albert Brinkman
B.S. in Phil. 1958, The George
Washington University
Ronald Jack Brinkman
(With distinction)
A.B. 1958, The George Washington
University
Harry Sidney Brown, Jr.
A.B. 1958, University of Missouri
James Edmund Casagrand
B.S. 1958, St. John's University
Russell Bruce Childs
A.B. 1957, Duke University
Ruth DeLoach
A.B. 1958, The George Washington
University
Fred M. Ewin, Lowrey, Jr.
A.B. 1958, Duke University

D.C. Arthur Kenneth Faust
A.B. 1958, University of Kansas
John LeRoy Fox
(With distinction)
Calif. Irwin Stanley Freeman
A.B. 1958, Harvard College
John Carl Fitch
Del. 1958, Johns Hopkins
Va. B.S. 1958, Utah State Agricultural
College
Conn. Martin Ann Fuchsberg
A.B. 1958, Yale University
Calif. Leonard Herman Fuchsberg
Md. B.S. 1958, Franklin and Marshall
College
D.C. Bernard Gladstein
B.S. 1958, Yale University
Charles Norman Goldman
Hark in Medicine 1958, University
Mo. A.B. 1958, Boston University
N.J. M.S. 1958, The George Washington
University
Pa. John Khouri Hadad
(With distinction)
D.C. A.B. 1958, Cornell University
M.S. 1958, University of North Carolina
M.S. 1958, Hampshire
D.C. Alan Charles Hampshire
A.B. 1958, Williams College

Monte Arnold Herman A.B. 1936, The George Washington University	D.C.	Pedro Mario Pabon-Gomez A.B. 1955, Polytechnic Institute of Puerto Rico	Puerto Rico
George Charles Hilbery A.B. 1934, University of California	Wis.	Robert Marr Payne B.S. 1955, Brigham Young University	Va.
Robert Edward Hurlbert A.B. 1936, The George Washington University	Calif.	Manuel Perez-Gonzales B.C.E. 1944, College of the City of New York	N.Y.
Robert Howard Iben A.B. 1935, Washington State College	D.C.	Diane Patricia Perring A.B. 1955, San Francisco State College	Calif.
James Edwin Jackson A.B. 1935, Washington State College	Va.	Kent Albert Peterson A.B. 1936, The George Washington University	Mid.
John Edward Kelly A.B. 1935, Princeton University	Va.	Juergen Francis Piper Joseph Vincent Pastore B.S. in Phil. 1951, The George Washington University	Mid. Va.
James Edward Kemp A.B. 1935, University of Utah	N.Y.	William Lloyd Jague A.B. 1955, Williams College	Mid.
James Hamilton Kerner, Jr. A.B. 1934, Duke University	D.C.	Frederick Carl Patten A.B. 1936, The George Washington University	D.C.
Robert Samuel Lottory Kander A.B. 1935, Brown University	Fla.	William Alfred Powell A.B. 1936, Ohio Wesleyan University	D.C.
Andrew Stanley King A.B. 1935, Williams College	R.I.	ASL 1936, Williams College	
Robert Earl Klatsky A.B. 1935, Yale University	Conn.	Therese Robert Joubert A.B. 1955, B.S. 1955, University of California	Calif.
John Robert Koenigsberg A.B. 1935, Johns Hopkins University	N.Y.	Deane Kober A.B. 1955, West Virginia University	W. Va.
James Kenna A.B. 1935, New York University	Mid.	Reuben Douglas Reider B.S. 1955, Brigham Young University	Idaho
James Henry Ketter A.B. 1935, Hamilton College	N.Y.	Peter Robert Rugani A.B. 1955, New York University	N.Y.
James John Kinkle A.B. 1935, The George Washington University	N.Y.	A.M. 1955, Columbia University	
James Arthur Landaw A.B. 1935, University of Wisconsin	Ohio	Edward Underwood Scherer, Jr. B.S. 1955, Harvard College	Pa.
James Earl Landow A.B. 1935, Columbia University	D.C.	Gilbert Roland Schoerer A.B. 1955, Stanford University	Calif.
James Earl Landow A.B. 1935, Columbia University	N.J.	Gordon Eugene Scott B.S. 1955, University of California	Calif.
James Earl Landow A.B. 1935, Columbia University	Calif.	Leroy Aven Settel B.S. 1955, Rutgers University	N.J.
James Earl Landow A.B. 1935, Columbia University	Calif.	Joan Adela Shattuck (With distinction) B.S. 1955, Rutgers University	Mid.
James Earl Landow A.B. 1935, Columbia University	Calif.	Margaret Bess Shook George Louis Sigmund A.B. 1955, Lafayette College	Mid. Va.
James Earl Landow A.B. 1935, Columbia University	Calif.	John Joseph Smith A.B. 1955, Union Hall University	D.C.
James Earl Landow A.B. 1935, Columbia University	Calif.	Edmond Allen Spauldell A.B. 1955, Williams College	N.J.
James Earl Landow A.B. 1935, Columbia University	Calif.	Eugene Field Taylor, Jr. David Best Van Every A.B. 1955, University of California at Los Angeles	Calif. Va.
James Earl Landow A.B. 1935, Columbia University	Calif.	John Russell Washburn A.B. 1956, The George Washington University	D.C.
James Earl Landow A.B. 1935, Columbia University	Calif.	Charles Stanley Wallcut Melvin Clayton Williams Willfred LeRoy Williams B.A. 1955, Williams College	Conn. Pa. Calif.
James Earl Landow A.B. 1935, Columbia University	Calif.	Paul Ming Hsing Yen (With distinction) B.S. 1955, University of Redlands	Formosa
James Earl Landow A.B. 1935, Columbia University	Calif.	Ira Sydney Young A.B. 1955, Lafayette College	N.Y.
James Earl Landow A.B. 1935, Columbia University	Calif.	Carmen Giovanni Yappa	Calif.

THE LAW SCHOOL

BACHELOR OF LAWS

OCTOBER 18, 1958

Thomas Graham Bell	Nev	Paul Joseph Maslin	Mo
B.S. in B.A. 1958, University of Nevada		A.B. 1944, Bowdoin College	
Channing Derek Blumer	Mo	A.M. 1944, Howard University	
A.B. 1955, The George Washington University		Ottomir Maria Antonov Neiman	Pa
Stanley Edwin Breyman	Va	B.S. in G.E. 1953, St. Louis University	
A.B. 1956, The George Washington University		Russell Brown Norton	Pa
Kenneth Brewster Caulter	D.C.	A.B. 1924, University of Virginia	
A.B. 1950, Princeton University		Isaac Alexander Frenson	Pa
Roger Wayne DeLoach	Va	B.I.E. 1942, New York University	
B.S. in M.E. 1950, University of California		David Martin (President III)	Pa
Donavon Lee Fayre	Ill	B.S. 1950, Morgan State College	
B.S. 1942, University of Illinois		D. Alex Thompson Ready	Mo
Donald Conrad Feiz	Va	A.B. 1954, New York University	
B.S. in E.M.E. 1952, Purdue University		Robert Richmond Reiman	Mo
Albert Eugene Fey	Mich	B.S. in E.E. 1955, University of Michigan	
B.S. in M.E. 1955, University of Michigan		John Henry Rogers	Mo
Robert Carl Foldersner	Va	B.S. in M.E. 1956, University of Colorado	
A.B. in Govt. 1954, The George Washington University		John Howard Sharon	Pa
John Allen Gann	Mo	A.B. 1949, Princeton University	
B.S. 1949, University of Maryland		Vincent Jerome Sherry, Jr.	Va
George Merton Good	Fla	A.B. 1941, Western Kentucky State College	
A.B. 1951, Emory University		Michael Francis Smith	Mo
Allen Hugh Harrison, Jr.	Va	A.B. 1947, A.M. 1951, University of Texas	
A.B. in Govt. 1954, The George Washington University		Robert Morris Van Horn	Pa
Marion Frank Heeman	Va	A.B. 1950, The George Washington University	
B.S. 1941, Ohio State University		Joseph Leo Ward	Va
Ph.D. 1955, University of Illinois		A.B. 1954, University of Nevada	
Laurie DeLox Hyde, Jr.	Utah	James W. Wells	Va
A.B. 1954, Brigham Young University		A.B. 1954, Virginia Military Institute	
		John Edmund Yoder	
		A.B. 1955, Morehead College	

FEBRUARY 23, 1959

Tyler Abell	Va	Lawrence Darnow Hontaman	Pa
A.B. 1954, Amherst College		B.S. 1956, Pennsylvania State University	
Wendell Peston Almes	D.C.	David Lyon Kahn	N.Y.
B.S. 1954, University of Utah		A.B. 1954, University of Miami	
Warren James Allen, Jr.	Pa	Thomas John Kato	Mo
A.B. 1951, University of Pennsylvania		A.B. 1949, Cornell University	
Thomas Allen Bailey	Va	John David Kent	N.Y.
B.E.E. 1952, Valparaiso University		A.B. 1954, Cornell College	
Worren Goodman Campbell	Idaho	Robert Everett Levin	Va
B.S. 1951, University of Nebraska		A.B. 1951, Duke University	
William Yates Farnsworth, Jr.	Va	John Frederick Livingston, Jr.	Va
A.B. 1954, Brigham Young University		B.S. in B.A. 1955, University of Arkansas	
Elmer Anthony Fay	Texas	Carl Vernon Lyon	D.C.
A.B. 1956, Texas Western College		A.B. 1954, West Virginia Wesleyan College	
John William Frazar	Maine	A.M. 1951, American University	
A.B. 1952, Dartmouth College		Henry Francis Beaumont Mason	Va
Alan Bennett Fry	D.C.	A.B. 1950, The George Washington University	
A.B. 1951, University of Maryland		Michael Theodore McDonald	Va
Marc Stuart Gann	N.Y.	A.B. 1952, University of North Carolina	
B.S. in Ch.E. 1955, Massachusetts Institute of Technology		Ralph Allen Milliken	
Richard Wayman Hanco	Va	B.S. in E.E. 1950, Northeastern University	
B.S. in E.E. 1951, Purdue University			
Howard Richard Haronian	R.I.		
B.S. 1955, University of Rhode Island			

R. Lee Morgan B.S. 1952, West Virginia University	W Va	Marjorie Alan Sovern B.S. 1944, Pomona University	D.C.
L. John Nard III B.S. 1953, University of Illinois	Ill	Marion Cole Sowers B.S. 1942, American University	Md
W. Spence Oberlin B.S. 1955, Pomona University	Va	M.S. 1944, Georgetown University	
W. John Perry B.S. 1953, Georgia Institute of Technology	Va	Frederick Clyde Timberlake B.B.A. 1941, Westminster College	Va
W. John Perry B.S. 1953, Georgia Institute of Technology	Va	M.B.A. 1944, Ohio State University	
W. John Perry B.S. 1953, Georgia Institute of Technology	Va	Dale Owen Tinsman A.B. 1945, University of North Carolina	N.C.
W. John Perry B.S. 1953, Georgia Institute of Technology	Md	William Francis Tinsman B.S. 1941, M.S. 1943, Florida State University	Fla
W. John Perry B.S. 1953, Georgia Institute of Technology		Matthew Ross Wade A.B. 1941, Pacific Union College	Calif
W. John Perry B.S. 1953, Georgia Institute of Technology	D.C.	Harold Webb B.S. 1941, University of Alabama	N.Y.
W. John Perry B.S. 1953, Georgia Institute of Technology	Md	Paul Harold Weinstein B.S. 1943, Washington and Lee University	D.C.
W. John Perry B.S. 1953, Georgia Institute of Technology	D.C.	William Jacob Wilson A.B. 1944, State University of Iowa	Va
W. John Perry B.S. 1953, Georgia Institute of Technology		Maxine Wootton B.S. in Ch.E. 1944, Drexel Institute of Technology	Pa
W. John Perry B.S. 1953, Georgia Institute of Technology	N.C.	Franklin Harold Waffle B.S. in Ch.E. 1944, University of Maryland	D.C.
W. John Perry B.S. 1953, Georgia Institute of Technology	Va		
W. John Perry B.S. 1953, Georgia Institute of Technology	N.Y.		

JUNE 3, 1959

Frederic Lee Ayres B.S. 1959, Bowling Green College of Ohio	Va	Ralph Henry Fiddess A.P. 1946, The George Washington University	Va
Frederic Lee Ayres B.S. 1959, Bowling Green College of Ohio	Va	John Arthur Fiedler-Fiedmann A.B. 1944, Harvard University	Conn.
Frederic Lee Ayres B.S. 1959, Bowling Green College of Ohio	Md	Daniel Tobias Fiedler A.P. 1946, The George Washington University	D.C.
Frederic Lee Ayres B.S. 1959, Bowling Green College of Ohio	Conn.	Jamie Alan Gieppert B.S. in Ch.E. 1944, Northwestern University	Ill.
Frederic Lee Ayres B.S. 1959, Bowling Green College of Ohio	Pa	Everett Goussard Ginnison, Jr. B.S. in E.E. 1948, Virginia Polytechnic Institute	Va.
Frederic Lee Ayres B.S. 1959, Bowling Green College of Ohio	N.Y.	Bernice Franking Goffin B.E.E. 1941, University of Virginia	Va.
Frederic Lee Ayres B.S. 1959, Bowling Green College of Ohio	Va	Lowell Louis Goussard B.S. in Eng. 1944, Case Institute of Technology	Va.
Frederic Lee Ayres B.S. 1959, Bowling Green College of Ohio	Okla.	Thomas Oliver Harbert B.E.E. 1941, Columbia University of America	Va.
Frederic Lee Ayres B.S. 1959, Bowling Green College of Ohio	D.C.	Robert Richard Harg B.S. 1941, Columbia University	Nev.
Frederic Lee Ayres B.S. 1959, Bowling Green College of Ohio	Va	Walter Dean Hill B.S. 1941, Ohio State University	Va.
Frederic Lee Ayres B.S. 1959, Bowling Green College of Ohio	Ohio	Hubert Farnham Hinson A.B. 1944, University of Massachusetts	N.Y.
Frederic Lee Ayres B.S. 1959, Bowling Green College of Ohio	Okla.	Francis Mandy Hinson A.B. 1944, University of Hawaii	Hawaii
Frederic Lee Ayres B.S. 1959, Bowling Green College of Ohio	Va	Thomas Hinson Hinson B.S. in E.E. 1944, University of Miami	Fla.
Frederic Lee Ayres B.S. 1959, Bowling Green College of Ohio	D.C.	Doris William Johnson B.S. 1941, Bowling Green College	N.Y.
Frederic Lee Ayres B.S. 1959, Bowling Green College of Ohio	D.C.	Frank Vernon Johnson B.S. 1941, Brigham Young University	Utah

Delmar Kabrich, Jr. A.B. in Govt. 1935, The George Washington University	Va.	Reginald Harrison Pledger, Jr. A.B. 1955, Duke University	Va.
Barlin Lewis Koch B.S. 1933, Brooklyn Polytechnic Institute	N.Y.	Nancy Pickett B.S. 1938, St. Mary College, Kansas	Ks.
Edward Wayne LeBaron, Jr. A.B. 1935, College of the Pacific	Calif.	John Ferguson Rodgers A.B. 1936, University of Louisville	La.
Richard Guy Leone B.S. 1934, University of Wisconsin	Wis.	Shep Kalman Rose B.S. in Phys. 1955, University of Georgia	Ma.
Robert Eugene Long A.B. 1933, Indiana University	Ind.	Douglas Joseph Rykhus A.B. in Govt. 1951, The George Washington University	Pa.
Frank May Milson B.S. 1932, M.S. 1935, North Texas State College	Texas	Donald Jack Salina B.S. 1954, D. C. Teachers College	D.C.
Leo Indio Maltoni B.C.E. 1947, Rensselaer Polytechnic Institute	N.Y.	Kenneth John Scott A.B. 1951, Harvard University	Pa.
Charles Austin Marlow, Jr. A.B. 1931, The George Washington University	Va.	Paul Peter Senio B.S. 1954, Carnegie Institute of Technology	D.C.
Doris Richard Marston A.B. 1936, Harvard University	N.Y.	Ivan Jay Shederman B.S. 1954, University of Maryland	Ma.
Douglas Robert McKinnis B.M.E. 1951, Rensselaer Polytechnic Institute	N.Y.	Julian Lee Siegel B.S. 1954, The George Washington University	Va.
James Joseph McKeever B.S. 1935, Furman University	N.Y.	Nicholas Skovran B.S. 1950, M.S. 1952, Pennsylvania State University	N.Y.
Marion Samuel Meier B.C.E. 1951, Rensselaer Polytechnic Institute	D.C.	John Gordon Smith B.S. 1955, Columbia University	Mass.
Alex Moss, Jr. B.S. in Ch.E., Met.E. 1949, University of Michigan	Mich.	John Luis Sniado B.S. in Ch.E. 1955, University of Massachusetts	Va.
Patricia James Moriarty A.B. 1937, American International College	Va.	Edwin Wallace Snider A.B. 1947, Princeton University	Tx.
A.M. 1951, University of Minnesota		George Roderick Snyder A.B. 1944, Pennsylvania State University	Ma.
James Elmer Nathanson A.B. 1954, Harvard University	Mass.	Paul Gordon Scotland A.B. 1957, University of Maryland	Va.
William Albert Neal A.B. 1957, University of Maryland	Ma.	Sylvia Carol Fry A.B. 1950, University of Michigan	Ma.
Edmund John Newbold B.S. 1945, U.S. Naval Academy	N.Y.	Jack Rush Turney A.B. 1956, Western Maryland College	N.Y.
Thomas Bennett Oakes A.B. 1955, Yale University	Va.	James Victor Villarejo A.B. 1950, University of Wisconsin	D.C.
James David O'Brien B.S. in F.S. 1951, Georgetown University	Mass.	James Aubrey Wong B.M.E. 1951, The George Washington University	Fla.
Arthur Irving Palmer, Jr. B.E. 1942, Yale University	Va.	Quillian S. Yancy B.S. 1950, Florida Southern College	N.Y.
M.A.M. 1946, University of Virginia		Murray Zweben B.S. 1953, M.S. 1953, New York State Teachers College, Albany	
Thomas Madison Phillips B.E.E. 1950, Georgia Institute of Technology	Va.		

JURIS DOCTOR

OCTOBER 18, 1958

William Frederick Beerler A.B. 1951, Wesleyan College	Pa.	George Joseph Leibowitz B.S. 1951, College of the City of New York	Ma.
A.M. 1957, Clark University		Carl George Love A.B. 1950, College of Wooster	Va.
Gayard Nelson Benton B.S. 1952, A.M. 1953, University of Kansas	Kans.	Joy Thomas Todd B.S. 1950, University of Nebraska	Calo.
Marion Patton Esholt, Jr. B.S. in C.E. 1945, Virginia Military Institute	Va.	A.M. 1950, University of Denver	Ohio
James Joseph Flunk, Jr. A.B. 1953, University of Notre Dame	N.Y.	John Charles Vassil B.S. in Ch.E. 1952, Carnegie Institute of Technology	

FEBRUARY 23, 1959

Alvin Herbert Bernstein B.S. 1955, Drexel Institute in Entomology	Pa.	James Adalbert Lann A.B. 1958, A.M. 1959, University of California at Los Angeles	Md.
John Westland Black A.B. 1957, University of Washington	Md.	Robert Marvin Thomas B.S. 1951, U.S. Coast Guard Academy	Conn.
James Edward Cookhead B.S. 1957, Columbia University	Ohio	Harold Walter Wapner B.S. 1952, Utah State University of Agriculture and Applied Science	Utah
Robert H. Haggart A.B. 1956, The George Washington University	D.C.	Daniel Edward Williams A.B. 1953, Idaho State College	Idaho
Henry Nakaki Kitamura B.S. 1952, University of Hawaii	Hawaii	Jack Fenner Zimmerman B.S. 1948, U.S. Naval Academy	Kansas

JUNE 3, 1959

Walter Lawrence Bateman A.B. 1956, The George Washington University	D.C.	James Thomas Lewis A.B. 1958, Randolph-Macon College	Va.
Charles William Colton A.B. 1958, Brown University	Va.	Thomas Neal McNeary A.B. 1952, DePue University	Va.
Paul Thomas Connor B.S. 1955, Case Institute of Technology	Va.	Charles James Mueller (With distinction) A.B. 1954, Nebraska Wesleyan University	Neb.
John Andrew Inaz B.S. 1954, Lehigh University	Pa.	Robert Hays Montgomery B.S. 1954, The George Washington University	Va.
Henry George Lushbaugh A.B. 1956, The George Washington University	D.C.	Philip Stanley Neal A.B. 1954, University of Colorado	Va.
Paul Arthur Oregon (With distinction) A.B. 1951, The George Washington University	D.C.	Jack Pines B.M. Eng. 1951, New York State Maritime College	Va.
Kenneth Stuart Humphreys B.S. 1956, Brigham Young University	Wyo.	James Henry Rumpke A.B. 1956, The George Washington University	Md.
Charles Marvin Kaplan B.S. 1953, Massachusetts Institute of Technology	Tenn.	Warren Herbert Rutter B.S. in A.E. 1954, Lafayette College	Va.
Alan Kay A.B. 1957, The George Washington University	Va.	Robert Willis Schmitz A.B. 1958, University of Michigan	Md.
John Marie Kely A.B. 1956, Athens Magna College	Conn.	Louis Eugene Shattuck, Jr. B.S. 1954, Georgetown University	Va.
Robert Walter Rosen B.S. in M.E. 1956, University of Michigan	Va.	Richard Joseph Smeal A.B. 1956, The George Washington University	Md.
Earl Samuel Lachstrom A.B. 1956, A.M. 1957, University of Oregon	Va.	William Harold Stashforth B.S. in C.E. 1955, University of Southern California	Va.
David Richard Levinson A.B. 1954, New York University	D.C.	Edmund Monte Stauden A.B. in Govt. 1954, The George Washington University	Md.
		John Eugene Yalton A.B. 1954, Brown College	N.Y.

MASTER OF LAWS

OCTOBER 18, 1958

Malcolm Albert Litman B.S. in M.L. 1951, Purdue University	Mo.	Geoffrey Myron Van Sledright A.B. in Govt. 1959, J.D. 1954, The George Washington University	D.C.
James William Mayer B.S. 1954, LL.B. 1957, University of Kentucky	Md.		

FEBRUARY 23, 1959

Ross Warren Cantrell A.B. in B.A. 1951, LL.B. 1957, Montana State University	Md.	Nathan Ross J.D. 1952, New York University LL.B. 1956, The George Washington University	Md.
--	-----	--	-----

J. Fred Hamblen
B.S. 1947, LL.B. 1949, University
of Tennessee
Ohio Kentucky
LL.B. 1949, Louisiana State University
Walter Clarence Miller
A.B. 1951, Pennsylvania State
University
LL.B. 1957, The George Washington
University

Tenn. Kenneth Edward Peary
A.B. 1947, Kansas State Teachers
College, Emporia
La. LL.B. 1950, University of Kansas
Suranne Virginia Richards
Pa. A.B. 1948, J.D. 1957, The George
Washington University
Richard Roland Sigmon
LL.B. 1957, University of Maryland

JUNE 3, 1959

Charles David Abland
B.B.A. 1952, LL.B. 1954, University
of Oklahoma
Joseph Warren McNab Darling
B.S. 1941, Howard University
M.B.A. 1944, University of
Pennsylvania
LL.B. 1954, The George Washington
University
John Burdison Evans
A.B. 1944, University of Virginia
LL.B. 1945, The George Washington
University
John William Fabrey
A.B. 1947, LL.B. 1949, The George
Washington University

Okla. Marion Edwyn Harrison II
A.B. 1951, University of Virginia
LL.B. 1954, The George Washington
University
Pa. Lloyd Edward Hesseaur, Jr.
B.S. in Eng. Law 1951, LL.B. 1957,
Wayne State University
John Edward Rodgers
LL.B. 1950, Vanderbilt University
Va. Charles Thomas Vetter, Jr.
A.B. 1946, Hamilton College
LL.B. 1951, National University
James Patrick White
A.B. 1951, I.D. 1956, State
University of Iowa

MASTER OF COMPARATIVE LAW

JUNE 3, 1959

Herrnig Walter Edward Wever Germany
Referendar 1958, University of Bonn
Germany

MASTER OF COMPARATIVE LAW

(American Practice)

FEBRUARY 23, 1959

George Cioara
A.B. 1956, University of Moldavia
of Arad, Romania
LL.B. 1957, King Ferdinand I
University, Romania
B.D. 1952, Colgate Rochester Divinity
School

Md. Karlis Vilis Kalnins
Diploma in Law 1954, University of
Latvia

JUNE 3, 1959

Latvia George Pischke
LL.B. 1957, Masarik University,
Czechoslovakia
A.M. 1958, American University

D.C.

DOCTOR OF JURIDICAL SCIENCE

FEBRUARY 23, 1959

Robert Milton Schmidt
B.B.A. 1951, M.B.A., LL.B. 1954,
University of Michigan
H.M. 1958, The George Washington
University
Dissertation "The Criminal Net
West Doctrine"

Mich

JUNE 3, 1959

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OCTOBER 18, 1958

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FEBRUARY 23, 1959

1. The Lee News, 1911

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JUNE 3, 1959

D.C.	Daniel Aime Ruyter
Va	Henry Richard Tapp
Mo	Theodore Melgosa
Miss	Quinn Remy Melzer
Va	James Henry Miles, Jr.
Va	James Stuart Miles, Jr.
Va	(W. J. Melzer)
Mo	Harold Curtis Fowler
Pa	Joseph Martin Remick
Va	Frederic Monahan Renshaw
Va	B. F. Renshaw, University of
Mo	Missouri
Va	Charles Everett Sampson
Pa	Charles Newton Sargent
Mo	Thomas R. Sargent
Va	U. S. Army U. S. Military Academy
Mo	Joseph William Sargent
	Lawrence E. Sargent
Va	M. E. Sargent, Highland School of
Mo	Missouri
	David Marvin White
Va	Thomas Bradley Wiggins

31. 11. 1950

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OCTOBER 18, 1948

Delivered to George Springer

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FEBRUARY 23, 1950

Va. **Reynard Paul Polatou.**
Va.

4.

JUNE 3, 1959

India	Dick H.
	Russell L.
	John P.
	Charles E.
	Richard C.
	Victor W.
	Leonard A.

DC

Mr.

1

1

145

99

BACHELOR OF SCIENCE IN ENGINEERING

OCTOBER 18, 1958

Alvin Kirtwood Pentecost
Albert Anthony PetrusVa. David Siu-Chi Yu
D.C.

JUNE 3, 1959

Victor A. Bartlett, Jr.
Charles Leonard Craft
William Henderson Franklin, Jr.
John J. LarsonMd. John Paul Keen
Va. Robert Milton Moore
Va. James O'Donnell Neal
D.C. George Bruce Taylor

MASTER OF SCIENCE IN ENGINEERING

FEBRUARY 23, 1959

Joseph H. Wetser
B.E. 1952, Rensselaer Polytechnic
Institute

N.Y.

JUNE 3, 1959

Neely Parveth Jones Matthews
B.S. in Eng. 1957, The George
Washington University
Dean Conway Riddle
B.E. 1955, The George Washington
University
William Ruchman Smith, III
B.S. 1956, Trinity College
B.E. 1958, The George Washington
UniversityVa. William Pittman Turner
B.S. in E.E. 1951, Tulane University
D.C. Ahmed Mahmoud Youssef
B.M.E. 1950, Cairo University,
Egypt

Va.

MASTER OF ENGINEERING ADMINISTRATION

OCTOBER 18, 1958

Vance Duncan
B.C.E. 1956, Ohio State University
Benjamin Katz
B.S. 1956, U.S. Naval Academy
Louis Nathaniel King
B.S. 1945, U.S. Naval AcademyD.C. Ralph Carl Schubert
B.S. in C.E. 1955, Cooper Union
Va. Donald Allen Weiss
R.M.E. 1955, Cornell University
Calif. Thomas Arnold Woods
B.S. 1950, Thomas Institute of
Technology

FEBRUARY 23, 1959

Lawrence Charles Ballard
B.S. 1950, U.S. Naval Academy
Robert Lee Bell
B.S. in C.E. 1959, University of
Southern California
James John Corman
B.E. 1953, The George Washington
University
Charles Williamson Feltows, Jr.
B.S. 1949, Virginia Polytechnic
Institute
John Francis Greenhalgh
B.S. 1957, U.S. Naval Academy
Orr Kenneth Julian
A.B. 1956, Friends UniversityPa. Robert Raymond Miskolczi
B.M.E. 1955, University of Minnesota
Va. Joseph Francis Must, Jr.
B.S. in Eng. 1956, Brown University
Md. Robert Paul Schaefer
B.S. in Chem. Eng. 1950, University
of Michigan
Fla. Carl David Waiback
B.E.E. 1951, University of Delaware
Willfred Aves Walter
B.S. 1950, U.S. Naval Academy
D.C. Raymond Wenzner
B.S.E. 1949, University of Michigan
D.C. Thomas Lowell Williams
B.M.E. 1956, Clarkson College of
Technology

JUNE 3, 1959

James Elmer Barnhill
B.S. in Ind. Eng. 1958, Georgia
Institute of TechnologyGa. Harry Jerome Bracken, Jr.
B.S. in C.E. 1950, Carnegie Institute
of Technology

Degrees Conferred

535

Howe Preston Cochran, Jr. B.S. 1948, Columbia University	Md.	Luther Bertram Nae, Jr. B.E. 1954, Johns Hopkins University	Va.
Howe, David B.S. 1945, U.S. Military Academy	Md.	William Edward Owen B.M.E. 1955, Alabama Polytechnic Institute	Va.
Howard Herman Juckelmeier B.S. 1927, U.S. Naval Academy	Calif.	Karl Gilbert Palmer B.S. 1941, Oregon State College	Oreg.
Howard Howard Fisk B.S. 1944, U.S. Naval Academy	Tenn.	Norman Haxler Peterson B.Aero E. 1948, University of Minnesota	Va.
Howe, David Frank B.S. 1944, University of New Hampshire	N.H.	George Brand Peat B.S. 1949, Rensselaer Polytechnic Institute	Md.
Howe, Grant House B.S. 1949, West Virginia University	W.Va.	William Leroy Reed, Jr. B.E. 1951, The George Washington University	Md.
Howe, Ted Jacob B.E. 1952, Vanderbilt University	Calif.	Edwin James St. Peter B.S. & M.E. 1950, University of Pennsylvania	Fla.
Howe, Bradley Keller B.S. 1942, U.S. Naval Academy	Ill.	Arthur Henry Schnevman B.M.E. 1950, Rensselaer Polytechnic Institute	Va.
Howe, Thomas B.S. 1943, M.S. 1947, University of Michigan	D.C.	William Shaw B.S. 1951, U.S. Naval Academy	Md.
Howe, Thomas Lutz B.S. 1943, M.E. 1947, University of Iowa	Fla.	Thomas Anthony Shesby B.M.E. 1951, Clarkson College of Technology	N.Y.
Howe, Thomas McCann B.E. 1951, The George Washington University	Md.	Alfred Schmid, Jr. B.S. & C.E. 1946, University of Nebraska	Nebr.
Howe, Ray Moody B.E. 1952, The George Washington University	Wash.	LL.B. 1953, Blackstone College of Law	Md.
Howe, Ray Moore B.S. 1951, U.S. Naval Academy	Va.	August Richard Wozar B.S. & C.E. 1950, Johns Hopkins University	Md.
Howe, William Newman B.S. & E.E. 1954, University of Maryland	Md.		

SCHOOL OF PHARMACY

BACHELOR OF SCIENCE IN PHARMACY

JUNE 3, 1959

James Iverson Carver II Edward Leo Catterlain Lewis Alfred Catterlain (With distinction—Special honors in Pharmacy)	W.Va. D.C. D.C.	Charles Herbert Jandt Karl Richard Kemp Alvin Miller Donald Henry Martin John Wesley Peacock, Jr. Jerrold Jerome Parnick Stanton Monroe Rado Edward Dexter Sprentsch	D.C. Pa. D.C. Md. D.C. D.C. D.C. Va.
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SCHOOL OF EDUCATION

BACHELOR OF ARTS IN EDUCATION

OCTOBER 18, 1958

Margaret Elizabeth Barry Eugene Marie Chapin Lillian Marie Dumas John Henry Dumas John Henry Dumas John Henry Dumas (With distinction)	Va. N.D. D.C. Va. Va. Pa. N.C.	Charles Edward Offutt Susan Lina Offutt, Proemba Dumaine Eugene Parnick Philip Alan Parnick Nancy Briggs Parnick Christine E. Parnick (With distinction)	D.C. S.C. Md. Md. D.C. Va.
Johnnie T. Parnick Johnnie T. Parnick Johnnie T. Parnick Johnnie T. Parnick	Va. Va. Va. Va.	Nancy Honey Wozar Rosalyn Leishman Wozar Ralph Emerson Wozar	Fla. D.C. Md.

FEBRUARY 23, 1959

Albetta Gay Barrier Margaret Hyatt Barton	D.C. Va.	Harold Eugene Bares Norma Frances Blum	D.C. Va.
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Maria Toucnda Bradford
Yvonne Miller Cooper
Walter Harold Ferrell

D.C. Edward Thorpe Reynolds
Va. Jacqueline Renee Satter
Va. Janvce Tamie Yoshizawa

JUNE 3, 1959

Satanelle Grayson Avedisian
Alexande Ella Bates
Joan Barbara Begelman
Maudine Greenberg Brecher
Irma Lora Brodsky
Thelma Elaine Driscoll
Nancy Jane Drouard
Kathryn Dolores Fisher
Virginia Lee Freeman
Shirley Peltin Goldberg
Arlene Lane Gordon
(With distinction)
Marion Ethel Green
(With distinction)
Elizabeth Knowles Guarilia
Candace Susan Lorange
Sherry Zvanes Keston
Judith Marie Korn
Daniel Thomas Kosek
Linda Ann Lancaster

Md. Beverly Rothstein Lerner
N.Y. Shirley Prince Lewis
Va. Marilyn Vickman Lichtman
N.Y. Thomas Francis Lindsey
Va. Jean Elizabeth Lokerson
Va. James Joseph Loughman
Ohio Stephen Charles Mohler
Va. Betty Pitt
D.C. Louis Jean Sartor
D.C. Doris Sara Schuman
D.C. Ruth Elaine Shuman
Va. Kathryn Anne Simon
Va. Susan Barbara St. John
Va. Sandra Lee Thompson Thomas
Va. Edward Nelson Vest
D.C. Louise Ramona Wallen
D.C. Helen Beatram Wilhelm
Va. Josephine Coleman Wilson
Md. Esther Janice Zimmerman

BACHELOR OF SCIENCE IN HOME ECONOMICS

OCTOBER 18, 1958

Clavelina Abad Quidafren

D.C.

FEBRUARY 23, 1959

Sally Lee Russell

D.C. Yibbhan Xoomvat

JUNE 3, 1959

Jeannette Virginia Broden
May Crouch Carlson

D.C. Priscilla Ann Cheek
Va. (Special honors in Home Economics)

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

OCTOBER 18, 1958

Francis Joseph Gleason
Harry Winfree Irvine, Jr.

D.C. Robert Anthony Jewett
Md. John Gilbert Jolly

FEBRUARY 23, 1959

Donald Martin Cory

III. Edward Steven Ernest Rutch

JUNE 3, 1959

Richard Martin Boninski
Richard James Boskey
Robert Charles Christie
Theodore Paul Colina
Gino D'Ambrosio
Ronald Arthur Dearden
Michael Puma

Pa. Robert Joseph Fruita
N.Y. Eugene Michael Guadagnoli
Mass. Fred Eugene Jenkins, Jr.
Pa. Arlene Dorothy Roeder
D.C. William Eugene Tetlow
Md. Carl Eugene Zaleski
Ga.

MASTER OF ARTS IN EDUCATION

OCTOBER 18, 1958

Thomas Charles Batson B.M. 1941, Hunter University B.S. 1946, West Virginia State College	Md	DeFosse, Howard M. Winter A.B. 1941, West Virginia State College	Ala
Harold E. Baskin A.B. 1950, Washington State College, Moscow	D.C.	Rachel Ruth McKay B.S. in Ed. 1948, Pennsylvania State University	Pa
Elizabeth Stewart Brooks B.A. in E.E. 1951, Boston University	N Y	Alice Downey, M. L. L. B.S. in H.E. 1944, New York State Teachers College, Buffalo	D.C.
University Jean Cattermole B.S. in Ed. 1949, Maryland State Teachers College, Towson	Va	Talmon, Frank Thomas B.S. in H.E. 1949, The George Washington University	D.C.
Anna Mary Davis A.B. in Ed. 1951, The George Washington University	D.C.	Jane Evelyn Phillips A.B. 1948, University of Denver	Colo
Federal Junior Eluma A.B. in Ed. 1949, The George Washington University	Va	Leona Pruden, Paul A.B. 1948, Cornell University	Md
Edward John Loney A.B. 1941, St. Anselm's College	Md	John Stanley Prash B.S. in F.E. 1954, The George Washington University	Va
Marjorie Plevak, Florida A.B. in Ed. 1946, The George Washington University	Md	Harold Eugene Quinn A.B. in Ed. 1940, Fairmont State College	Md
Ronald Carmel, Florida A.B. 1940, The George Washington University	Va	Robert Lynn Robinson A.B. 1941, Shepherd State College	Va
Laura Lockert Freeman A.B. 1946, Pacific Union College	Va	Frank William Robinson A.B. 1941, Emmanuel Missionary College	Va
John Shook, Conn. A.B. 1946, St. Anselm's College	Md	Richard Carlson Soper B.S. in E.E. 1948, Madison College, Iowa	Va
James Francis Hennessy B.S. 1946, University of Maryland	Va	Alfred Ernest Smith B.S. in F.E. 1941, The George Washington University	Md
James Oscar Knorr A.B. 1946, D.C. Teachers College	Md	Lee Lewis Smith B.S. in Ed. 1952, Marshall State Teachers College, Towson	Md
Helen Beck Leake A.B. 1940, Marshall College	Miss	Richard Howard Teasley B.S. in Ed. 1952, D.C. Teachers College	D.C.
	Md		

FEBRUARY 23, 1959

Dorothy Thelma Anderson A.B. 1949, Shepherd State College	W Va	John Frank Holup, Jr. B.S. in F.E. 1954, The George Washington University	Va
Elizabeth Anne J B.S. in F.H.S. 1950, University of Maryland	Md	Catherine Elena Janney A.B. in Ed. 1941, The George Washington University	D.C.
Nancy R. A.B. in Ed. 1944, University of Tulsa, Tulsa	Tulsa	Barbara Elna Koenig B.S. 1952, D.C. Teachers College	Md
Elizabeth Baker B.S. in Ed. 1949, Massachusetts State Teachers College, Framingham	Mass	Thos Robinson, Pastor A.B. 1944, The George Washington University	Md
Barbara Louise Bonner B.S. 1952, Boston University	D.C.	George Hamilton Rupp A.B. 1947, Shepherd State College	W Va
Anna Bertha Brown A.B. 1942, Oberlin College	Va	Margaret Ann Soley A.B. 1948, University of Western	D.C.
Lois Gladys C. C. A.B. 1942, Indiana College	Va	Lester B. Strong A.B. 1941, Mississippi College	Va
Donald McKenna Davis A.B. 1949, University of Maryland	D.C.	Harold Robert Ault B.S. 1941, Pennsylvania State University	Md
Mary Cochran Garrett A.B. 1948, Hunter College	D.C.	Irvin Gregory Wood B.S. 1944, D.C. Teachers College	D.C.
Lois Bender Blank A.B. 1946, The George Washington University	Va	Mary Evelyn Moore Wood A.B. 1941, Western College	Va
Edward Thomas Hennigan B.S. in Ed. 1949, Pennsylvania State Teachers College, East Stroudsburg	Va		

JUNE 3, 1959

Sue Charlotte Ackermann
B.S. in Ed. 1954, Pennsylvania State
Teachers College, East Stroudsburg

Martha Dunlop Anderson
B.S. 1954, Virginia State College

Miriam Marlene Brein
B.S. 1954, D. C. Teachers College

Al Haydar Caglayan
Licencié en science 1949, University
of Bordeaux, France

Joseph Clarence Courtney III
A.B. in Ed. 1953, The George
Washington University

William Ross Davis, Jr.
B.S. 1957, Maryland State Teachers
College, Frostburg

Earl Junior Dodrill
A.B. in Ed. 1950, Fairmont State
College

Helen D. Fenton
A.B. 1929, State College of Washington

Ivan Welton Fitzwater
B.S. in P.E. 1955, The George
Washington University

William Hubert Gatlin
B.S. in Ed. 1952, Southwest Missouri
State College

Jane Amater Gevirtz
A.B. 1954, Cornell University

Quentin Roosevelt Hambl
B.S. 1944, Stephen F. Austin State
College

James Merwin Hill
B.S. in P.E. 1956, The George
Washington University

Arthur Ernest Hirsch
B.S. 1940, College of the City of
New York

Vinette Eugenia Jones
B.S. 1954, Maryland State Teachers
College, Bowie

John Lawrence Keating
A.B. 1953, Boston College

Elma Kuchar Kelley
A.B. 1942, College of Notre Dame of
Maryland

D.C. Alva Tuserkani Kisie
A.B. 1952, San Francisco State College

D.C. John Henry Koellner
B.S. 1953, New York University

D.C. Tai-Hsuan Lin
Ed. B. 1944, National Chekiang
University, China

Turkey Dorothy Ferguson Little
B.S. 1948, D. C. Teachers College

Va. Almarita Denmark Mullen
B.S. 1948, D. C. Teachers College

Va. Marlene Marie Munson
A.B. in Ed. 1953, The George
Washington University

Md. Ferd Russell Myers
A.B. in Ed. 1956, Shepherd State College

Va. Eugenia Williams Ostermayer
A.B. 1940, The George Washington
University

Va. Diana Mae Richards
A.B. 1947, Marshall College

Md. Charles William Schulteis, Jr.
A.B. 1957, University of North Carolina

Va. Evelyn Dolores Scott
B.S. 1942, South Dakota State College

Va. Helet Gustavson Sylvester
A.B. 1937, Washington College

Md. Juanita Patricia Shoup
B.S. 1954, D. C. Teachers College

Va. Harold Forest Stevenson
B.S. in E.S. 1952, Georgetown
University

Va. Lillian Mildred Topalian
A.B. 1951, Western Maryland College

Md. Francis Gerald Tracy
B.S. in Ed. 1952, University of Scranton

Thos Van Housen Vu
A.B. 1955, Marycrest College

N.J. John Warren Waters
A.B. 1941, Morgan State College

Md. Don Raymond W. Wenzel
B.S. 1955, Oregon College of Education

Md. Louise Rosette Williams
A.B. 1937, Virginia Union University

ADVANCED PROFESSIONAL CERTIFICATE

OCTOBER 18, 1958

Joseph Warren Eberts
B.S. in Ed. 1954, Pennsylvania State
Teachers College, Kutztown

A.M. in Ed. 1955, The George
Washington University

Galen Hollinger Falmesback
B.S. 1950, Elizabethtown College

E.J.M. 1955, University of Virginia

Md. Harrison Elliot Tawney
B.S. in Ed. 1958, Ohio University

Ed M. 1951, Kent State University

Carolyn Lydia Wough
A.B. in Ed. 1957, A.M. in Ed. 1959,
The George Washington University

FEBRUARY 23, 1959

Bertha Williams Key
B.S. 1947, Ohio University

A.M. 1951, New York University

Md.

JUNE 3, 1959

Irvin Paul Lubickas B.S. 1947, A.M. in Ed. 1948, The George Washington University Georgetown School of Education B.S. 1947, D.C. Teachers College Washington University	Md.	Margaret Adiana Stant B.S. 1942, A.M. in Ed. 1945, University of Maryland	Md.
	Md.		

DOCTOR OF EDUCATION

OCTOBER 18, 1958

Margaret Hester Charlesworth A.M. 1947, Washington College A.M. 1947, University of California at Los Angeles Dissertation: "The Relationship Be- tween Varying Degrees of Self- Directed Control and Organizational Patterns for Selected Aspects of Teacher Education in Multiple Pur- pose Institutions"	Md.	Walter Hayden Russell A.B. 1944, Ed.M. 1948, Oklahoma City University A.M. in Ed. 1948, The George Washington University Dissertation: "Administrative Organi- zation of the Larger High School"	Va
		John Patrick Walsh B.S. in Ed. 1942, New York State Teachers College, Buffalo M.S. in Ed. 1947, Cornell University Dissertation: "Qualifications, Prepara- tion, and Competencies of Trade and Industrial Teachers"	Va

FEBRUARY 23, 1959

Zena Natzia Valenziano A.B. 1948, Louisiana State University A.M. in Ed. 1948, The George Washington University Dissertation: "An Evaluation of the Effectiveness of Supervisory Con- tinuous Study at the Secondary School Level"	D.C.
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JUNE 3, 1959

Kenneth Stanley Crockett A.B. 1928, Washington Missionary College A.M. 1952, Seventh-day Adventist Theological Seminary A.M. in Ed. 1954, The George Washington University Dissertation: "A Survey of Programs of Christian Vocational Education in the Protestant Universities of the United States as a Preparation for Pastoral Counseling"	Md.
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THE SCHOOL OF GOVERNMENT
BACHELOR OF ARTS IN GOVERNMENT

OCTOBER 18, 1948

Robert Wilson Besselt John Joseph Johnston George E. Foster John F. DeMartino John Alexander Dunt, Jr. Maurice Louis Love Thomas Joseph Gramlich II George Laurence Gault George Heister Heister, Jr. John E. Hays Robert E. Hoover Robert Earl Jarnoke	Va Pa Va Va D.C. D.C. Va D.C. D.C. D.C. D.C. N.E. Va	Robert Buchanan Johnson John Tyron Kerwin John Edgar Lester J. Warren Layne John E. Jack Martin John Edward Moore Margaret Elizabeth Prather William Nelson Pruitt William James Shaulhan David Spaulding Mark Emerson Spies Rex Henry Stewart	Pa Va Va Va Md Va Va Md Va D.C. Va Calif.
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FEBRUARY 23, 1959

Jean Ann Auld
Earl William Alexander
B.S. 1948, U. S. Merchant Marine
Academy
Joel George Andersson
Albion Henry Bentley
Louis Frank Bixby
Walter R. Clark
Gene M. Cain Connell
Andrew John Coppertone, Jr.
Edward James Forpatrick
John William Fox
Scott Aaron Fox
Ann Franklin Frieseman
James Samuel Fox
Richard Waldorf Gutzmann
Patrick Francis Hagley
Rosemary Evelyn Howard

Va. Bradley Beecher Trask
Ohio Margaret Groom-Jarvis
Donald Graham Jones
Hanson Leon Luster
Rye M. Lee Luster
Hanson Spencer Lower, Jr.
Rogers Wagoner Mancall
Helen Elmer Moore
Walter Fenton Moore
Marion Hiram Muehnick
John J. Patrick Nolan
Donald Edward O'Connor
Florence Otis Shuck
Karl Benjamin Smith
Robert Norman Sudd
Amy Kaye Sykes
Helen Elaine Wad. Jr.
D.C. Warren Jay Wheeler

JUNE 3, 1959

Raymond Van Dyck Hatten
Robert Forrest Bell
Morton Berg
Cotton Richard Bevala
George Edward Bickerton
Harry Peyer Blair
Harold Mark Bornstein
Joseph Boulay
James Earle Burgess
James Lansing Burke, Jr.
Joseph Andrew Chaszek
John Nicholas Dams
Charles Edward Dickmann
Vincent James Femia
Robert Louis Fidler
Suzanna Filipovich
Robert Francis Funnell
Charles Nathan Foster
Francis Morton Fritz
Stanley Jean Fox
Albert Joseph Galisky
Stanley Marvin Goldstein
Joseph Grossman
Louise Ann Hamilton
Edward Wirt Harrison
Leonard John Hartwig
Bradley Kaye Haynes
Ruth Dale Hodelman
Lee Jameson
Charles Ericsson Johnson
Joseph David Johnson
Lemon Joseph Kirsow III
Theresa Elizabeth Kucharski
Muriel Kupper
Arnold Carl Hermann Kopf

Md. Miles Search Lefkowitz
Va. Robert L. Lechner Lehman
D.C. Ruth Livingston
D.C. Anne Augusta Moxey
Va. Raymond Julius Matthews
Ill. Ron Christopher Naim
N.J. James Albert Olson
N.Y. Norman Elwood Oliver
Va. Lee Ming Pong
W.D. (W. D. Pong)
Md. Clarence Paul Pong, Jr.
Pa. Jo Leith Pongman Pugh
Mo. Ramon Tami Purdy
Pa. Lillian Rivers
Ill. Bruce Henry Roberts
D.C. B.S. 1951, Virginia State College
Md. Edmund John Samuels
D.C. Gilbert Edgar Stark
N.Y. Donald Edward Stead
Ind. Rachelle Marie Stepan
Cal. Howard Lyle Stern
Ohio Sakone
Md. Walter Horstman Tanager
N.J. William Thomas van Buren
Ola. (Special honors in Business Administration)
Va. John Seymour Turner
Va. Robert Leon Waters
D.C. (W. D. Waters)
Ola. George William
D.C. James Dale Wadell
Va. Thomas George Wadell, Jr.
Pa. David Paul Wal Wo
Md. Martin Samuel Zippin
Va. Robert Kenneth Ziser

MASTER OF ARTS IN GOVERNMENT

OCTOBER 18, 1958

Josephine Elizabeth Anthony
A.B. 1946, Columbia College, South
Carolina
Derek Curtis Bick
A.B. 1951, Stanford University
H.B. 1954, Harvard University

S.C. Glen David Dealy
A.B. 1957, University of Washington
Va. Charles Duke Gutzman
A.B. 1954, Texas Christian University

Degrees Conferred

541

Bette Haase A.B. 1952, Heiligenstadt Convent, Germany	Va	Estelle Stoen A.F. in Govt. 1951, The George Washington University	Fla
Mary Henderson Sanders A.B. 1952, Butler University	Fla	James Allen Young A.B. 1954, Ohio Wesleyan University	Ohio
Robert James Smith A.B. 1952, Princeton University	Fla		

FEBRUARY 23, 1959

Amir Mustafa Al-Samir B.S. 1958, University of California	D.C.	Mark Wilfrid Mugan B.S. 1958, University of Maryland	Fla
Robert Louis Bower A.B. 1957, University of Maryland	Va	Campanile Lombard Mastromarino A.B. in Govt. 1954, The George Washington University	D.C.
Amal K. Shahi A.B. 1957, H. B. 1957, A.M. 1957, University of Bombay	India	Paramaswamy Raman A.B. 1958, University of Madras	India
Paul M. M. Dean A.B. 1958, Indiana College	Calif	A.M. 1958, Nagpur University	
James George Dwyer A.B. in Govt. 1957, The George Washington University	Md	A.M. 1958, University of Bombay	N.Y.
Robert Edward Janger A.B. 1958, Western Reserve University	Md	Oscar Henry Rindfleisch B.S. 1958, University of Maryland	

JUNE 3, 1959

Joseph Noy Benster A.B. 1958, Universidad publica de la Universidad de Panama	Panama	William Parker McHenry, Jr. A.B. in Govt. 1956, The George Washington University	D.C.
John Louis Galt A.B. 1958, Idaho State College	Md	Earl Kenneth Moore A.B. in Govt. 1957, The George Washington University	Tenn
James W. W. Jewett A.B. 1958, Jewett College	Md	Parvata Ram Phommou B.S. in Ed. 1957, Kathar State Teachers College	D.C.
James W. W. Jewett A.B. 1958, University of the Federal Republic of Brazil	Brazil	James R. Roca A.B. in Govt. 1957, The George Washington University	Md
James W. W. Jewett A.B. 1958, Instituto de Ciéncias da Pontifical Catholic University of Rio de Janeiro		Charles R. Roca William Zimmerman, IV A.B. 1958, Swarthmore College	Md Va

MASTER OF ARTS IN PERSONNEL ADMINISTRATION

OCTOBER 18, 1958

James H. Carter B.S. in R.A. 1957, Salem College	D.C.	John Robert Murphy A.B. 1958, University of Southern California	Calif
James H. Carter A.B. 1958, Duke University	N.C.	Delmar Alfred Thibodeau B.S. 1958, Georgetown University	Maine

FEBRUARY 23, 1959

John H. Carter B.S. in R.A. 1957, Salem College	Md	Isaac Henry Mahoney A.B. 1958, University of Maryland	D.C.
James H. Carter A.B. 1958, The George Washington University	Va	Wayne Polinsky Rabin B.S. 1958, U. S. Naval Academy	Okla

JUNE 3, 1959

James H. Carter A.B. 1958, University of Pittsburgh	D.C.	James H. Carter B.S. 1957, U. S. Military Academy	Okla
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MASTER OF ARTS IN PUBLIC ADMINISTRATION

OCTOBER 18, 1958

Melvin Max Barnett
A.B. 1956, University of Maryland

Texas James Robson Gilmore
B.B.A. 1950, University of Georgia

FEBRUARY 23, 1959

Gayle Muran Bennett
B.S. 1957, University of Maryland

Iowa Mohammed Amjad Shah
A.B. 1942, University of Panjab
A.M. in Govt. 1957, The George Washington University

JUNE 3, 1959

Lawrence Congreve
B.S. 1953, University of Maryland
Austin Sylvester Hall
B.S. in Com. 1942, State University of Iowa

La. James Vernon Harvester
A.B. 1947, Florida Southern College
Md. B.D. 1949, Emory University

MASTER OF BUSINESS ADMINISTRATION

OCTOBER 18, 1958

Warren Edward Cetrone
B.S. 1958, University of Maryland
Raymond Kenneth Cooke
B.S. 1957, University of Maryland
Marshall Herman Cress
B.S. 1956, University of Maryland
John Gregory Dancy
B.S. 1956, University of Maryland
George Alfred Davies
A.B. 1956, University of the Philippines
Lewia Vernon Eber
B.B.A. 1956, University of Toledo
James Fisher Finken
B.S. 1943, U. S. Military Academy
Charles Robert Garton
B.S. 1946, The Citadel
Edward Harold Heinen
B.S. 1947, Roosevelt College
Edward Edward Hummel
B.S. 1957, University of Maryland
Leo Keith
B.S. 1944, Roosevelt University
Charles Arthur Klotz
B.S. 1951, Johns Hopkins University
William Philip Lottum
B.S. 1957, University of Maryland
Frederick Arthur Lupton, Jr.
A.B. 1949, Johns University
Wayne Valley Mims
B.S. 1957, University of Maryland
Vernon Raymond Mumford
B.S. 1957, University of Maryland
Low Wesley Newcomer
B.S. in B.A. 1958, Utah State University of Agriculture and Applied Science

N.Y. Carl Addison Paige
B.S. 1957, University of Maryland
Va. Wyly Parsons
A.B. 1950, Knox College
Texas Frank Robert Rea
B.S. 1951, Providence College
Calif. Marlen James Reber
A.B. 1941, Eastern Michigan College
Va. Frank Adams Roper
B.S. 1947, University of California
Ohio Charles Stanley Seabrook
B.S. 1956, University of Maryland
Va. Orland Dale Sailer
B.S. in M.E. 1949, University of Arkansas
N.C. Robert Burton Stemme
A.B. 1954, Sacramento State College
Va. Cooper Morris Thompson
B.S. 1948, Pennsylvania State University
Pa. Elmer Newton Troska
A.B. 1952, Sacramento State College
Ill. John Edgar Warren
B.S. 1956, University of Maryland
D.C. Allen Whitney Wagoner
A.B. 1947, Amherst College
Va. Donald Washington Wagoner, Jr.
B.S. 1941, Georgia Institute of Technology
Texas John William Wyden
A.B. in Govt. 1955, The George Washington University

FEBRUARY 23, 1959

William Henry Harrier, Jr.
P.H.D. 1954, Tulane University
Dun. Cecil Jackson
B.S. 1953, Albion Christian College

La. Joel Linner Ross
A.B. 1946, Yale University
Md. John Joseph Shaughnessy
B.S. 1955, University of Maryland

JUNE 3, 1959

Norman Pershing Adelson	B.S. in Comm. and B.A. 1941, University of California	Va.	William Louis Kurtz	A.B. in Govt. 1941, The George Washington University	Va.
Earl Wayne Bailey	B.S. 1942 U.S. Naval Academy	Mich.	Sylvester Frank Lee	B.B.A. 1946, University of Miami	Fla.
Robert Rexford Bensch	B.S. 1947, Ohio State University	Va.	Robert Henry MacPherson	B.S. & B.A. 1947, Rutgers University	N.J.
James Henry Bensch	A.B. 1947, Florida State University	Fla.	Albert Salvatore Mayvito	B.B.A. 1948, College of the City of New York	Va.
Robert Charles Bush	B.B.A. 1948, University of Pittsburgh	Pa.	Frank Louis Mayvito	A.B. in Govt. 1948, The George Washington University	D.C.
Edward Stanton Caple, Jr.	B.S. 1944, U.S. Naval Academy	Idaho	James Henry McConell III	A.B. 1948, University of Virginia	D.C.
Ernest Fredrick Dreesbach, Jr.	B.S. 1945, University of Maryland	Ohio	John Edward Palmer	B.S. 1948, University of Maryland	Mo.
Robert William Dreesbach	B.S. 1947, Longwood College	N.Y.	Norman Nathan of Posenberg	B.S. 1948, College of the City of New York	N.Y.
George Byron Edwards, Jr.	B.M.E. 1948, University of Minnesota	Mich.	Vincent Joseph Pons, Jr.	B.S. 1948, St. Peter's College	N.J.
Charles E. Edens	B.S. 1948, U.S. Naval Academy	Va.	Leslie Roscoe Schmeidler	B.S. 1944, U.S. Naval Academy	Pa.
One Kemple Good	A.B. 1947, The George Washington University	Va.	Doris Litta Stevens	B.S. in Ed. 1948, A.M. 1949, University of Nebraska	Nebr.
Max Louis Henry	B.B.A. 1944, University of Michigan	Ill.	Clarence R. Stepien	B.S. 1944, U.S. Naval Academy	Ky.
LeRoy Monroe Hicks II	B.S. 1944, West Virginia University	W.Va.	M.I.A. 1943, The George Washington University		
Howe William Hill	B.S. 1947, U.S. Military Academy	Utah	Russell Leonard Tawle	B.S. in Ch.E. 1948, M.S. in Pet.E. 1949, University of Texas	Calif.
Donald Douglas Holmes	B.S. 1948, U.S. Naval Academy	Mich.	George Donald Tracy	A.E. 1948, Boston University	Va.
M.S. 1948, Massachusetts Institute of Technology			Robert Henry Wynn	B.S. 1946, U.S. Naval Academy	Mich.
John Wayne Kelly	B.S. 1948, Wake Forest College	N.C.			
John Robert Kelley	B.S. in M.E. 1949, State University of Iowa	Iowa			

DOCTOR OF BUSINESS ADMINISTRATION

OCTOBER 18, 1958

Abdul Momin As-Sayid Ali	A.B. 1941, American University at Beirut	Iraq
M.B.A. 1944, Stanford University		
Dissertation: "A Study of the Banking System and Its Role in the Economic Development of Iraq"		

JUNE 3, 1959

LeRoy Harris Marshall	A.B. in Ed. 1940, A.M. 1944, The George Washington University	Va.
Dissertation: "The Compensation of Manpower Resources in the Military Establishment"		

THE COLLEGE OF GENERAL STUDIES

ASSOCIATE IN ARTS

OCTOBER 18, 1958

N.Y.	Lorraine Alexandra Keefe	Va.
Va.	Genard Augustine Santori	Va.
Fla.		

William Henry Conditine
Grady Merissa Lomovan
and Joseph Hanflord

FEBRUARY 23, 1959

Daniel Rowanko
 Edward A. von Gumb
 William Madison Hustness
 Harold Minton Johnson, Jr.
 Robert Henry Kofke
 Lucille Rose Kohn
 (With distinction)
 Richard Dee Malcomson

Pa. Walter Robert Manetis
 Va. Robert Louis M. Neely
 Va. Edward Donald de Oremity
 Mass. Anthony Bernard Farnitz
 Mich. Bruce William Foster
 Va. Lillian Fox Quigley
 Calif. Shuzo Sakai

JUNE 3, 1959

James Anthony Antonellis
 James Powell Atwood
 Frederick T. Austin Barnett
 Joseph Mark Boret
 George Allen Brigham
 Henry Richard Drexler
 John Thomas Gaskin
 Charles Major Goez
 Edward William Hayes
 Herbert Norman Hux
 Richmond Ralph Johnson

Mass. Leonidas Clinton Koonce
 Ga. Warren Henry Mowbray
 (With distinction)
 N.J. William Norman Maynor
 R.I. Robert Eugene Murphy
 Va. Anne Constance Parker
 Md. Paul D. Strickner
 S.C. Herman Abington Walker
 (With distinction)
 N.Y. Claude Russell Yates III
 N.Y.

BACHELOR OF ARTS

OCTOBER 18, 1958

Francis Joseph Bergin
 Kathleen Major Berry
 (With distinction)
 Delbert Eugene Brandenbourg
 Paul Vincent Chapman
 Douglas Herbert Christensen
 William Henry Considine
 John Sumner Ervin
 William Michael Gallagher
 Herbert George Geiger
 Edward Leonard Gellnicht
 Floyd Barry Hower, Jr.

N.Y. Kenneth Edward Joye
 Calif. (With distinction)
 James Keith
 Ohio Bertha Welch Kenly
 (With distinction)
 Pa. Norman Franklin Lamberton, Jr.
 Calif. Oliver Wendell Lewis
 N.Y. Wheeler Bryson Lipas
 Va. Michael Pivarnik, Jr.
 Pa. George Morgan Rankin, Jr.
 Wis. Julius Albert Sakas
 Fla.
 Pa.

FEBRUARY 23, 1959

Stratton Mayfield Appleman
 Edward Stanley Ault
 George Wayne Bowser
 Robert Wayne Calvert
 Robert Henry Duwel
 William Bryan Everett, Jr.
 John Frank Gaudin
 Robert Harvey Hootshaw

Texas Lawrence Aloysius Keels
 Ohio Frederick Herman Klopper
 Ill. Frederick Samuel Kunkle, Jr.
 Kansas Fred Muma
 Ohio Frederick James Mewer
 N.C. Joseph Felix Smeets, Jr.
 N.Y. Lon Campbell Thomas
 Va.

JUNE 3, 1959

William Francis Abernathy
 (With distinction)
 William Morgan Erickson
 Fred Wilson Farnack, Jr.
 Edward J. Jones Grier
 (With distinction)
 William Madison Hustness
 Thomas Hunsford
 Michael Lynn

Calif. Harold Edward M. Ray
 N.C. Muriel Jean Mowbray
 D.C. Rosalind Warren Murphy
 Md. Vernon James Pugh
 Va. Anthony B. Farnitz
 Va. Jack William Richmond
 Fla. Paul Leroy Thompson
 Idaho Fred Charles Young
 Raymond W. Art

MASTER OF ARTS

OCTOBER 18, 1958

Frank Ross Jones	Md	La
A.B. 1928, The George Washington University		
Reginald Wessman Wagner	Fla	
A.B. 1928, The George Washington University		

FEBRUARY 23, 1959

James Lowell Richard	N.C.	Ohio
B.S. 1921, Bowling Green State University		
William Bedford Shawell	Mo	Calif.
B.S. 1921, University of Maryland		
Lowell Gene Sewell	N.J.	Iowa
B.S. 1921, State University of Iowa		
James Edmund Thompson	Mo	Ky
B.S. 1921, University of Kentucky		
Raymond Eugene Tillman, Jr.	Va	S.C.
B.S. 1921, University of Maryland		

JUNE 3, 1959

Angeline Klutz	D.C.	Md
B.S. 1921, University of Maryland		
David Thomas McColl	Pa	N.C.
A.B. 1921, Virginia Christian College		
Joseph Milton McNeil	Va	Ky
B.S. 1921, State University of Iowa		
Robert Clifton McHugh	Calif.	La
B.S. 1921, Louisiana State University		
Archie Edmund Moore	Va	Calif.
B.S. 1921, State University of Iowa		
Ruth Louise Olson	Va	N.M.
A.B. 1921, The George Washington University		
Bernice Ann Peterson	Va	Wash.
A.B. 1921, State University of Washington		
Robert Martin Post	Tenn	Ind
A.B. 1921, University of Pennsylvania		
Frederick Edward Pomeroy	W.Va	W.Va
B.S. 1921, Marshall University		
Richard Lewis Rausch	Va	Tia
A.B. 1921, University of Southern California		
Orson Joseph Schaller	Mass	Ohio
B.S. 1921, University of Southern California		
Harmon Leland Smith	Va	Ind
B.S. 1921, The George Washington University		
Harold Eugene Smith	Va	Calif.
B.S. 1921, U.S. Naval Academy		
Constance Thompson Wagner	Va	Md
A.B. 1921, The George Washington University		

THE GRADUATE COUNCIL
DOCTOR OF PHILOSOPHY
OCTOBER 18, 1958

- Ross Charles Hornig, Jr.
A.B. 1948, Augustana College
A.M. in Govt. 1953, The George Washington University
Dissertation: "Winston Churchill and British Policy Towards Russia, 1941-1945"
- Krishen Dayal Mathur
B.S. 1946, M.S. 1948, Osmania University, India
A.M. in Govt. 1953, The George Washington University
Dissertation: "Some Aspects of International Control and Peaceful Uses of Atomic Energy"

- Wis. Herbert S. Posner
B.S. 1953, College of the City of New York
M.S. 1955, Purdue University
Dissertation: "Investigations on the Mechanism of Biological Hydroxylation of Aromatic Compounds"

D.C.

FEBRUARY 23, 1959

- John Bramley Moloney
B.S. 1947, Union College
M.S. 1948, The George Washington University
Dissertation: "The Role of Lipids in the Biological Activity of the Rous Sarcoma Virus"
- Kenneth Freeman Mosman
A.B., A.M. 1951, The George Washington University
Dissertation: "The Effect of a Disturbance of the Mechanism of Serotonin and Noradrenaline on the Acquisition of a Conditioned Avoidance Response in the Rat, by Inhibiting Monoamine Oxidase with Iproniazid Azide, and in Combination with Reserpine"
- Ingolf Holger Eilert Olsen
A.B. 1941, University of Cincinnati
A.M. in Govt. 1950, The George Washington University
Dissertation: "Regulation of Immigration in the United States by the Federal Government"

Md.

Va.

Mo.

- Sechindra Nath Pradhan
B.S. 1950, M.B. 1945, Calcutta University
D.T.M. 1948, School of Tropical Medicine, Calcutta
Dissertation: "Effect of Chlorambucil on the Synthesis of Protein and Nucleic Acids in Tumor-bearing Mice"
- James Henry Rust, Jr.
B.S. 1954, Franklin and Marshall College
M.S. 1956, The George Washington University
Dissertation: "The Marine Toxin of *Paracaulerella pestis*"
- Alice Smaller Thurston
A.B. 1927, Dartmouth University
A.M. 1945, Northwestern University
Dissertation: "An Experimental Study of the Relative Effectiveness of Group Counseling and the Orientation Course in Assisting College Freshmen"

JUNE 3, 1959

- Austin Jerome Buzis
B.S. 1913, College of the City of New York
A.M. in Govt. 1942, The George Washington University
Dissertation: "Solution to Problems on Solomon Kuftrack's 'Information Theory and Statistics'"
- Lloyd Eugene Church
A.B. 1942, West Virginia University
D.T.S. 1943, University of Maryland
M.S. 1945, The George Washington University
Dissertation: "The Early Development of Bone in the Chick"
- Samuel W. Greenhouse
B.S. 1950, College of the City of New York
A.M. 1954, The George Washington University
Dissertation: "Information Theory and the Statistical Problem of Discrimination"

Va.

Md.

Md.

- Harry Weingarten
A.B. 1943, College of the City of New York
A.M. 1945, Columbia University
Dissertation: "The Law of Large Numbers and Related Theorems"
- Marguerite Louise Young
A.B. 1945, A.M. 1949, University of Wisconsin
Dissertation: "The Influence of Nature of Concept and Form of Presentation on Concept Attainment"
- Vincent Gerald Zannoni
B.S. 1951, College of the City of New York
M.S. 1956, The George Washington University
Dissertation: "Studies on the Role of Ascorbic Acid in Tyrosine Metabolism"

HONORARY DEGREES

OCTOBER 18, 1958

Water Maximilian Bastian—*Doctor of Laws*

Benjamin Mosby McKelway—*Doctor of Letters*

FEBRUARY 23, 1959

Cloyd Heck Marvin—*Doctor Honoris Causa of
The George Washington University*

JUNE 3, 1959

Nation Davis—*Doctor of Science*
Allen Welsh Dulles—*Doctor of Laws*

James William Fulbright—*Doctor of Laws*
Melville Bell Grosvenor—*Doctor of Laws*

RECIPIENTS OF AWARDS

1958-59

SCHOLARSHIPS

- The Alpha Zeta Omega Scholarship:* Robert Alan Reznick
The Alumni Scholarship: David Grant Armstrong, Nelson Harry Coar, Jr., William Thomas Daly, Richard Hale Fischman, Harry Bryce Qualman, Daniel George Tuerck, Thomas K. Warner
The American Foundation for Pharmaceutical Education Scholarships: Ronald Lee Block, Anna Jurgens
The American Society of Women Accountants Scholarship: Nancy Elizabeth Oliver
The Byron Andrews Scholarship: Richard William Engelbart
The Association of Federal Communications Engineers Scholarship: Kitt E. Gilliland
The Anna Bartuch Scholarship: Ruth Dickerson
The Everett Lamont Beutler Scholarship: Ward Bullard Hurlburt
The Capital Farm and Garden Scholarship: Constance Fielding Thom
The Emma K. Carr Scholarship: Frederick Augustus Bode (spring semester), Luther Edward Creel III (fall semester), Edmund Parke Crump, Robert Michael Groves, Sidney Robert Hersh (spring semester), Howard Hill (spring semester), Eugene Gary Hossawa, Charles Orl Johnson (spring semester), Robert Childs Macdonald, Pedro Manuel Macedo, Joseph McLaughlin, Jr., Paul Albert Oscar (spring semester), Alfred Dawson (fall semester), Richard Lee Potterton, Vito Tanni, Stephen Arthur Tamm, Christine Harry Tamm (fall semester), Arthur Richard Ugel (fall semester), Marvin White, Herbert Swain Wilkinson (fall semester)
The Henry Harding Carter Scholarship: Jerry Kamenetzky
The Maria M. Carter Scholarship: Wayne Allen Davis
The Crown Photo Scholarship: JoAnne Thompson
The Daughters of The American Revolution Scholarship: Elizabeth Handley Oliver
The Isaac Davis Scholarship: Louise Rae Meyerovitch
The District of Columbia Pharmaceutical Association Scholarship: Mary Elizabeth Caulman
The Charles Worthington Dimes Memorial Scholarship: Walter Lawrence Bussan
The Estella Constance Drane Scholarship: Blanche Hyatt Keller
The School of Engineering Scholarship: John Carl Alexy, Lawrence Morton Dennis, Jr., Robert Stanley Dunn, Donald Lee Eddins, William Perazich
The Henry Parsons Brown Scholarship: Henry Donald Beck
The Robert Farham Scholarship: John Francis Berberich
The General Motors Scholarship: William Henry Burke, Jr., John Pierce Dorell, Richard Sales Lykes, Joyce Judson Orndorff, George Bruce Taylor
The Georgetown Business and Professional Women's Club Scholarship: Cynthia Mason Rhodes
The Grant-in-Aid Scholarships: Nicholas Ralph Anzelmi, Jack Allen Arthur, Robert James Barriere, Victor A. Bartlett, Jr., Stephen Joseph Bartnicki, Howard Orr Bush, George Edward Bickerton, Richard Martin Bonniok, Edgar George

Bowers, Henry Frederick Busky, Frank Charles Campagna, John Robert Carraro,
William Bradley Carmello, Robert Charles Christie, Thelma Paul Cohen,
George Connor, Douglas Morgan Crupper, Gino D'Amico, Ronald
Deaton, Ronald Michael DeMelfi, Louis DeNouze, John Granville
Egan, Michael Elias, William Hugh Fearer, Jeffrey Allen Feldman, Jon Allen
Feltner, Benson Alexander Finkel, William John Flynn (fall semester), Robert
Furia, Donald Francis Gatti, Myron Stanley Gossner, Norman Scott
Gross (fall semester), Eugene Michael Guerin, Andrew Anthony Guida, Leon-
ard Benjamin Gutman, Thomas Harold Ha'vi, Joe David Hancy, William
Dennis Hardy, Ayin Dwayne Harkleson, Joel Roger Hedinowski, Donald
Gaines Herman, Michael Roy Horton, Dennis Wesley Hall, Edward John Hays,
Ewin Hour, Gayle Hood (fall semester), Charles William Horvick,
Richard Leo Hurck, William Horace Ingrassia, Robert Alan Jones (spring semes-
ter), Leslie Kalin (fall semester), Leonard George Keeney (fall semester),
Samuel Ralph Kinsley, Warren Jerome Krick, Ralph Edward Kutter, Saul Lu-
is Lowitz, David Burdon Lockman, Ray Michael Lowrey, George Hamilton
Mason (fall semester), Ronald Peter Mata'avage, Howard Victor M. Donald, Geoffrey Lee
Nelson (fall semester), Carl Ray Nidder, Richard Ernest Olsen, Joseph
Edward Oefow, Charles Demorick Packman, Charles Leonard Padgett, Jr.,
Ray Palmer, Joseph John Paluck, William Thomas Pascher, Eugene
Ray, Ray Jerome Power, Ronald Kenneth Reeves, Thomas John Russell,
Edward Steven Rutsch, Charles Ernest Sampson, Rolf Schmittman (fall semes-
ter), Gerald Rudler Schweickhardt, Marvin Paul Sisman, Jerry Michael
Singer, William Edward Smythe, Albert Harry Snyder, Alexander Gregory
Soria, Peter Rudolfer Sommer, Jack Kershaw Tart, James Kershaw Tart,
Eugene Tolasky, Jackson Ronald Terwinger, James Maria Trimm,
Leonard G. Ushkin, James Dale Walters, Peter Joseph Wasilewski, William
Richard Wells, Herbert Duane Wherstone, John Allen White, James Samuel
Whithead, John Allen Whiting, John Benjamin Milton Witt, Ellis Bowman
Wine Jr., Raymond George Yarabina, Carl Eugene Zwick
The Anna Spaker Hempel Scholarship, Miriam Kringle Haring
The Anna Spaker Hempel Scholarship, Mary Chilton McNeil
The Anna Spaker Hempel Scholarship, Frances Maria Fille
The Anna Spaker Hempel Scholarship, Louis Charles Adams, Robert Marshall Aiken,
Walter Francis Bass, Maria Phaedra Bode, Beverly Ruth Brister, John Foster
Brown, Edward Bernard Byrd, Dorothy Joanne Carlson, Nancy Elizabeth
Gardner, William George Jones, Jr., Paula Roberta Fortney, Lois Beverly
Fry, Barry Kenneth Gould, Roy Woodrow Harding, Jr., Yvonne Carlotta
Barnes, Marie Ann Harper, Arnold Hestrich, Kiri Kalvik, Carol Elizabeth
Lind, Eugene Deborah Lubert, Patricia Evin Matthews, Lester Augustine
Morgan, Louis Leonard Nelson, Stephen Jerome Newman, Karen Kinsinger
Roth, Stephen Perkowski, Gary Lawrence Rabin, Stella Schlossberg,
William Lynn Seaman, John Lynn Sullivan, Richard Steven Weisberg
The Anna Spaker Hempel Scholarship, Paul Allen Fieck, William
The Anna Spaker Hempel Scholarship, Richard Vernon Rutter
The Anna Spaker Hempel Scholarship, Carolyn Mena Colton
The Anna Spaker Hempel Scholarship, Richard Andrew Wells, Jr.
The Anna Spaker Hempel Scholarship, James Peter Gregory (spring semester), JoAnne Marie
Hart, David Mann, Reed L. Moss, William Albert Neal, Daniel Sachs
The Anna Spaker Hempel Scholarship, Kenneth John Stark, William Edward Watson
The Anna Spaker Hempel Scholarship, Evelyn Marie Baumann, Elaine
The Anna Spaker Hempel Scholarship, Katherine Buckhorn, Hana Rachel Bode, Allen Barry
The Anna Spaker Hempel Scholarship, Anne L. Meyer, Stephen Karl Dietz, Markos Ethel Gram, Rud-
The Anna Spaker Hempel Scholarship, Edward Donald Cates, Stephen Karl Dietz, Markos Ethel Gram, Rud-
The Anna Spaker Hempel Scholarship, Anne Marie Kerschbaum, Margaret Mary McHale, Rich-

ard Murnick Merelman, Kenneth L. Milstead, Jr., Mary Kay Patterson,
 borah Alde Resnick, Eunice Maureen Root, Thomas Richard Spradlin
The A. Morthouse Scholarship: Henry Justin Ferry
The Newspaper Scholarships: William Harold DeLaVergne, Jr., Thomas Francis
 Diamond, Charles Narber Finney, Robert Francis O'Connor, Jerry Coleman
 Surley
The Panhellenic Association of Washington, D. C., Scholarship: Sondra Ann
 Ford, Nancy Lee Head
The Paul Pearson Scholarship: Milton Ellis Stewart
The Phi Delta Delta Scholarship: Anna Joyce Capps
The Phi Delta Gamma Scholarship: Helen Frances Skopie
The Lula M. Shepard Scholarship: Janice Ann Hamilton, Judith Gay Wiley
The David Spencer Scholarship: Constance Joan Campbell
The Mary Lowell Stone Scholarship: Norma Joyce Rosenberg
The Charles Clinton Swisher Scholarship: Mona Leah Koppel (fall semester),
 Gerald M. Wootler
The Texaco Scholarship: Charles Olaf Johnson (fall semester), Herbert Sam-
 Wilkinson (spring semester)
The William Walker Scholarship: Henry Justin Ferry
The John Washington Scholarship: Sandra Jean Clements
The Women's Advertising Club of Washington Scholarship: Priscilla Anna Chas-
 The Ellen Woodhull Scholarship: Nancy Ruth Leppert
The Zonta Club of Washington, D. C., Scholarship: Helen Frances Skopie

PRIZES

1958-59

Alpha Chi Sigma Freshman Awards in Chemistry: Rebecca Hillard Getson, De-
 Anna Frances Petrich, Richard Steven Wootler
Alpha Chi Sigma Senior Award in Chemistry: Karin Ursula Kochler
Alpha Delta Pi Award in Scholarship and Leadership: Loretta Kane
Alpha Kappa Psi Award in Commerce: William Harrison Tinslet
Alpha Zeta Omega Award in Pharmacy: Forde Delmond Lubet
American Institute of Chemists Award in Chemistry: Karin Ursula Kochler
Burns Thurstall Burns Award in Organic Chemistry: Paul Campbell Parks
Martin L. Cannon Memorial Award in Pharmacy: Martin Kenes Hyman
Cai Omega Award in Social Sciences: Ann Hilduan Schenck
John Henry Coates Awards in Government: Jen-Ming Pan, Robert Le-
 Wootley
D-Way Clinton Cressant Awards for an essay on drama or the theater: Gen-
 Francis Stoddard
E. K. Catter Award in English: Toxe Esther Neville
Lane Davis Awards in Public Speaking: Robert Emmett Murphy, Stephen
 Esther Sella, Jane Anne Nusselt
Delta Gamma Award for scholarship, extracurricular activities, and service to the
University: Joyce Julian Orndy
Delta Zeta Award in Zoology: Marion Elisabeth Bode
Jeon Award in Greek: Ruth Gordon Rector
Joseph Frederick Henry Award to that student who has given promise of great
achievement and ability in "forthright reporting": Elizabeth Ellen Evans, Rose
 Winship Stuart II

James Egan, III Memorial Award to that man in the graduating class who has demonstrated his special ability in the moral and political sciences and who has shown promise of the interpretation of that ability in good citizenship among his fellowmen: Thomas Richard Scudwin

W. E. Pack Memorial Award in Chemistry: Karin Ursula Kuchler

Frederick S. Freed Award to that member of the graduating class in the School of Medicine who has demonstrated exceptional proficiency in the field of Preventive Medicine: Melvin Clayton Williams

Charles Gomer Award to that student in the Law School who has attained the highest average grade in the third-year, full-time courses: Philip Arthur Grauman

Ann Douglas Gouillard Award in American Literature: Ann Wickertman Brown

Howard Gouillard Award in French: Kenneth Walter Buell, Jr.

John Douglas Gouillard Award in Pharmacy: Lewis Albert Cirenbaum

Thomas E. Gouillard Award in Commerce: Jen-Ming Pang

Thomas E. Gouillard Award: Robert M. M. Moore

Howard Gouillard Award to the senior in the School of Medicine who has demonstrated exceptional proficiency in the field of Surgery: Albert Bernhard Ben

Frederick G. Hubbard Memorial Award in United States History: Mona Kuppel

Walter K. Ray: Gordon Reuter

John H. Ray Award to the woman law student in the freshman class who has attained the highest average for the freshman year: Patricia Roberts Harris

John H. Ray Award: Carol Elizabeth Lander

Kappa Gamma Award in Botany: Carol Elizabeth Lander

Best Learner Award to that member of the graduating class of the Law School with the highest scholastic standing: Charles James MacLean

W. L. Landon Award in Obstetrics and Gynecology: Samuel Michael Belinsky

Walter Landon Award in Materials Testing: Paul Wilson Young, Jr.

Walter Landon Award to the woman student in the Scholastic Class having a scholastic standing of B or higher and the most outstanding record in activities: Patricia Roberts Harris

Walter Landon Award: Charles Edwin Huse

S. V. Master Award in Orthopedic Surgery: Charles Edwin Huse

Delta Kappa Award to that member of the Senior Class who, throughout the course, has done the most constructive work in student activities: Edith Ruth Ruch

Delta Kappa Awards to the first- and second-year full-time students in the Law School who have attained the highest average grades: Alan David Hirschman

Walter Landon Award to that member of the graduating class of the School of Medicine with the highest scholastic standing: John LeRoy Fox

Delta Kappa Award in Teacher Education: Ronald Arthur Dowdson

Delta Kappa Award to the beginning male student attaining the highest scholastic average in his first full semester of work: Robert Steven Weinberg

Delta Kappa Award to that member of the Senior Class who, throughout her college career, has done the most to promote student activities: Georgeanne Wainwright

Delta Kappa Award in Psychology: Samuel Trygve, Jr., Lynn Cushman D'Amico

Delta Kappa Award in Mathematics: William Bernard Gouillard

Delta Kappa Award in Chemistry: Maria Elizabeth Bode

Delta Kappa Award in Latin: Barbara Jean Doughton

Delta Kappa Award in Physics: Lawrence Klein

Delta Kappa Award in English: Charles Edward Dickinson

Delta Kappa Award in Business: Eugene Hill

Delta Kappa Award in Sociology: Joanne May Wright

STUDENT ASSISTANTS

JUNE 1, 1958 TO JUNE 1, 1959

- Accounting:* Cohen Richard Boyda, Vincent James Femia, Michael Isaac Gudis, Joe David Haney, Edward Ward Hartman, Robert Earl Newman, James Albert Obeid, Anthony Salimone
- Art:* Martin Paul Amst, Pepita Larnelle
- Biology:* Joseph Donald McLane, Jr., Albert William Varquez
- Botany:* Elizabeth Corrinne Bailey, Duncan Riggs Burchard, Naomi V. Koch, Michael Bart Spivak
- Business Administration:* Priscilla Ann Check, Jane Hilgedick, Carlton Lowe (A.B.), James Henry McGrath III (A.B.)
- Chemistry:* Lawrence Klein, Karin Lydia Koehler, Jeanette Molly Sorensen
- Civil Engineering:* Joseph Harry Banta, Jr., Mary Alice Coates, Richard D. Dame, Arnold Lee Snyder, Jr., George Bruce Taylor, Constance Freeland, Gene Kevin Wieck
- Dramatic Activities:* Hope Campbell Barton
- Economics:* Bonnie Kathryn Borden, Oscar Donald Hoerr, Shannon H. (A.B.), Eunice Margaret Root
- Education:* John Gordon Bowe (A.M. in Ed.), George Ray Goldsmith (A.B. in Ed.), Helen Frances Skyles (A.B. in Ed.)
- Electrical Engineering:* Jay Ann Alton, Karl Bruce Avellar, Joseph Harry Banta, Jr., Thomas William Coleman, Linda Sandra Friedman, Frank Joseph Nardone, Susan Sigman, George Emile Titcomb, James Edward Wilson, Jr. (B.S. in Ch.E.)
- Engineering Administration:* Julie Ann Marsh, Linda Margaret Williams
- English:* Juliet Zella Jaffe, Helen Mary Scott, Peggy Jean Terry, Mary Ann
- Geography:* Eliza Stiles Miller, Jr., Katherine Ann Stiles
- Geology:* Frank Michael Goshaw
- History:* Helen Ruth Chesser, Rachel MacIver Dack (A.M.), Mary Kay Koppel, Carol Patricia Kover, William Antonio Medina (A.B.), Mary Ann Matuck, Virginia Carolyn Pandy (A.B.), Richard Arthur Rubin (A.B.), and Thomas Stiles (A.B.)
- Law:* Philip Arthur Grogan (A.B.), Thomas Neal M. Namara (A.B.), Roy Sh. Metcalf (B.S.), Charles James Metcalf (A.B.)
- Mechanical Engineering:* Davinder Kumar Anand, Karl Bruce Avellar, John P. Kinn, Herbert Warren Schar, George Bruce Taylor
- Pharmacy:* Catherine Frances Butler, George Michael Eutenei (A.M.), Richard Andrew Wick, Jr.
- Philosophy:* Robert Julian Getha
- Physical Education for Men:* Aym Dwayne Hackenrad, Dennis Wesley L. Lippman, Patricia Lee Martin, Barbara Jean Wash
- Physics:* Hans Ragnar Bode, Lisa Elizabeth Dack, Peter Marie Moore, Orville Winchell George Heybey, Robert Milton Moore, Janet Lee Thomas
- Physical Science:* Martin Berg, Bert Hubert Cooper, Jr. (A.B.), Edith Marie Fenton, Philip Francis Haker (A.B.), Robert Walter Koenig (B.S.), Robert Jacob Matthews, Clarissa Rutters, Harry Paul Stumpf (A.B.), William Johnson IV (A.B.)
- Psychology:* Arlen Ayman, Jon Richard Flucker, Linda Ann Gesber, Charles Matuck Harker, Hubert Arthur Hardy (A.B.), Marx Clayton McNew, Lee Miller, Lourdes Gussie Ortega, Allen Stanley Rowe (A.B.), Walter Ross Short (A.B.), Elisabeth Laura Stirling, Byron LeRoy Witt (A.B.)

Foreign Languages: Thomas Henry Connor, Patricia Joanne Evans (A.B.),
James A. Hamilton
Scandinavian Studies: Evelyn Marie Baumann
Mathematics: Marilyn Adams Gatin (A.B.), Thomas Francis Lindsey, Kathryn
Leuka (A.B.)
Science: Stuart Harold Gelber, Karlota Marie Koester, Lorraine Rochelle Meyers,
Miriam Anne Silverman
Arts: Maralyn, June Adams, John Franklin Bernhardt, Toy Ping Chan,
John Alan Ellis (A.B.), Susan Kinnemann, Mary Alenna Mayer, Allen Miller
Science (A.B.), Thomas Clair Varley
Arts: Robert Selwyn Chaban, John David Clough, George Frederick Crowell,
B.S., Frederick Newton Diddle, Janet Ann Grier, Charles Joseph Hoffmann,
John William Lasky, Lawrence Tolstol Lebl, Ronald Daniel Longson, Joseph
Michael McLaughlin, Jr., Kenneth L. Mistrad, Jr., Deborah Adele Reenick,
Sherry Watson Varquez, Leonard Wartofsky

STUDENTS REGISTERED

SUMMER SESSIONS 1958

FALL AND SPRING SEMESTERS 1958-59

Aabel, Bruce Collett	D.C.	Adams, Frances Lorraine	Va.
Adams, David Ernest	D.C.	Adair, Hollis Aubrey	Va.
Adair, John Gray	Md.	B.S. 1954, Lincoln Memorial University	Pa.
Adams, Linda Lou	D.C.	Adair, Jean	Pa.
Adams, Charles Henry	Maine	Adair, Roman Thomas	Pa.
A.B. 1957, Bowdoin College		B.S. 1954, Albion State College	Pa.
Adams, Nancy	Va.	Adair, Thomas Hamilton	Pa.
Adams, Suzanne Jeanne	Va.	Adair, Warren James, Jr.	Pa.
A.B. 1959, Western College for Women		A.B. 1953, University of Pennsylvania	Pa.
Abdalla, A. M. Mostein Ahmed	D.C.	Adams, Louis Charles	Pa.
Abdo, Rashid Ali	Va.	Adams, Alan Michael	Pa.
A.B. 1958, LaFayette College		Adams, Corale	Pa.
Abel, Frank Macmaster III	Va.	A.B. 1958, A.M. 1957, University of Michigan	Pa.
Abel, Robert Berger	Md.	Adams, Charles Edmund	Pa.
B.S. 1947, Brown University		Adams, Don Emerson	Pa.
Abel, Mary Margaret	Maine	B.A. 1957, University of Florida	Pa.
Abel, Tyler	Va.	Adams, Frederick Joseph	Pa.
A.B. 1954, Amherst College		B.S. in P.E. 1956, The George Washington University	Pa.
Abernathy, Horace Hall, Jr.	S.C.	Adams, George William, Jr.	Pa.
Abernathy, Julian Ray, Jr.	Ark.	B.S. 1954, University of Maryland	Pa.
B.S. 1957, University of Maryland		M.Litt. 1958, University of Pennsylvania	Pa.
Abernathy, Margaret Roberta	Va.	Adams, Harold Wallace	Pa.
M.A. B. 1947, Catholic University of America		B.S. in P.E. 1954, Purdue University	Pa.
Abernathy, William Francis	Calif.	Adams, James Bruce	Pa.
Adams, Sathabala	D.C.	A.B. 1941, The George Washington University	Pa.
Adams, Rona Candata	D.C.	P.B. 1953, Episcopal Theological Seminary	Pa.
Adair, Charles David	Okla.	Adams, Lynn Harrison	Pa.
B.B.A. 1952, LL.B. 1954, University of Oklahoma		Adams, Mary Joseph	Pa.
Ables, Wendell Peyton	D.C.	Adams, Nancy Mary	Pa.
B.S. 1954, University of Utah		A.B. 1947, American University	Pa.
Adams, Baha	N.Y.	Adams, Pauline Felix	Pa.
Adams, Jennifer	Frisc.	Adams, Quincy, Jr.	Pa.
Adams, Leslie	Md.	Adams, Robert Martin	Pa.
Adams, Alan Martin	D.C.	A.B. 1948, The George Washington University	Pa.
Adams, Gary E.	Md.	Adams, Robert William	Pa.
Adams, Joe Joseph		Adams, Robert William	Pa.
B.S. 1955, University of Maryland		B.S. 1954, Maryland College	Pa.
Abramson, Louis Kaplan	Md.	Adams, Norman Preston	Pa.
A.B. 1958, Brooklyn College		B.S. B.A. 1941, University of Arizona	Pa.
A.M. 1943, The George Washington University		Aden, Anna	Pa.
Abramson, Mary Jo	D.C.	A.B. 1955, University of Washington	Pa.
Adair, Robert Fulton	Va.	A.B. 1955, University of Washington	Pa.
A.B. 1952, Colby College		Aden, Benj. Wayne	Pa.
Adair, Maria Doris	N.Y.	Aden, Louis Wayne	Pa.
A.B. 1952, Syracuse University		B.S. 1944, D.C. Teachers College	Pa.
Adair, Henry Nelson	D.C.	A.M. 1947, The George Washington University	Pa.
Acker, Mary Kopp	Va.	Aden, Wendell Lloyd, Jr.	Pa.
B.S. 1958, Pennsylvania State Teachers College, West Chester		Aden, William	Pa.
Ackerman, Edward A.	D.C.	B.S. 1944, Franklin and Emma College	Pa.
A.P. 1951, A.M. 1950, Ph.D. 1950, Harvard University		Aden, Helen W.	Pa.
Ackerman, Fred Nathan	Md.	Aden, Marie American University	Pa.
Ackerman, Karl Henry	Md.	A.B. 1947, B.A. Teachers College	Pa.
B.S. in C.E. 1951, Tri State College		B.S. 1941, B.A. Teachers College	Pa.
Ackerman, Nancy Barbara	Del.	Aden, John W.	Pa.
Ackerman, Ronald A.	D.C.	Aden, Joseph Michael, Jr.	Pa.
Ackerman, Sue Charlotte	N.J.	B.S. in B.A. 1957, Northeastern University	Pa.
B.S. in Ed. 1954, Pennsylvania State Teachers College, East Stroudsburg			

Allen, Hugh Kendall	Md	Amstutz, James Bruce
Allen, Mary Louise	D.C.	A.B. 1940, DePauw University
A.B. 1941, The George Washington University		A.M. 1950, Ph.D. 1953, Tufts University
B.M.E. 1948, University of Maryland		And, Martin Paul
Allen, Mary Pearson	Ala.	Anderson, George
B.S. 1951, University of Alabama		P.S. 1958, Tufts University
Allen, Maudslow Joan	D.C.	Andel, Devinder Kumar
Alec, Morris	Md	Anderson, Marion
M.B.A. 1942, University of Chicago		Anders, Frank White
Allen, Robert Paul	D.C.	B.S. in Ch.E. 1942, University of California
Allen, Robert Kermit	Va	Anderson, Charles Jacob
Allen, William H.	Va	A.B. 1931, Knox College
Alex, Patricia Ann	D.C.	Anderson, Catherine Claire
Alex, Richard Hadley, Jr.	Oreg	Anderson, Stephen Foss, Jr.
A.B. 1956, Occidental College		B.F.E. 1956, The George Washington University
Alger, Robert Edward	Va	
Almon, George Eugene	Va	
Almon, Paul Lawrence	Va	
Almon, Randolph Robert	Calif	Anderson, Adrian William
A.B. 1947, University of California		Anderson, Arvonne Elizabeth
Almon, Robert Eugene	Va	A.B. in Ed. 1947, A.M. in Ed. 1949, The George Washington University
B.S. in E.E. 1957, Virginia Polytechnic Institute		Anderson, Arthur James
Almon, Vivian Lee		Anderson, Betty Lambert
Altman, Martha M.	Md	A.B. 1951, Colson College
B.S. 1957, Radford College	Va	Anderson, Carl Robert
Altman, Rose Charles		Anderson, Charles Thomas
A.B. in Ed. 1954, A.M. in Ed. 1955, The George Washington University	D.C.	A.B. 1955, Southern Pionier University
Almy, St. John Emerson		Anderson, Emily
Alper, Joan Annette	Md	Anderson, Donald Bryan
Alpert, Lawrence Jay	D.C.	Anderson, Donald King
Alpert, Richard Maleson	D.C.	Anderson, Donald Vladimir
Al-Samir, Ahmad	D.C.	A.B. 1953, Mississippi State College
B.S. in B.A. 1951, University of California	Iran	Anderson, Elmer V.
Alvord, Donald Jay	Calif	Anderson, Eam Drexel
B.S. 1957, University of California		B.S. 1945, Updala College
Alvord, Norman		Anderson, Gustavere Warren
A.M. 1945, University of Michigan		A.B. 1941, Ford University
Alterkive, Joan Monique		Anderson, Helen Sybil
A.B. 1949, Vassar College		Anderson, James Charnel
Attes, Burton Norman		A.E. 1958, McNeese State College
B.S. 1958, Yale University		Anderson, Jane Louise
A.B. 1941, Hunter College	N.Y.	Anderson, Joel Craig
Almon, Robert Lee	Conn	Anderson, Kathleen Ann
B.S. 1957, Worcester College		Anderson, Kenneth George
Almon, Philip Martin	D.C.	A.B. 1951, University of North Carolina
B.S. 1958, University of Maryland		J.D. 1958, The George Washington University
Amos, Ray LaVane		Anderson, Lawrence Michael
Amos, Charles Michael	Md	Anderson, Margaret Elam
Amos, Robert Williams	Md	Anderson, Marie Palamone
Amos, Joan Heller		B.S. 1957, D.C. Teachers College
A.B. 1943, University of California at Los Angeles	D.C.	Anderson, Martha Louise
Amos, Thomas		B.S. 1944, Virginia State College
A.B. 1951, Brooklyn College	D.C.	Amstutz, Marion Lee
Amos, David	Va	Amstutz, Marion
Amos, Barbara Anne		B.S. 1947, M.S. 1954, The George Washington University
A.B. in Govt. 1948, The George Washington University		Anderson, Mary Elizabeth
Amos, David Lyndle	Minn.	B.S. 1942, Purdue University
Amos, Lawrence Loren	Va	A.M. & L.S. 1954, University of Michigan
A.B. 1948, The George Washington University		Anderson, Marylee Louise
Amos, David		Min. B. 1958, Berea College
Amos, Clall Neil		Anderson, Marie Louise
B.S. 1954, U.S. Naval Academy		B.S. 1944, D.C. Teachers College
		A.M. 1958, New York University
		Anderson, Paula Hawkins
		Anderson, Richard Ragnone
		Min. B. 1957, Berea College
		Anderson, Robert Allen
		B.S.E. 1954, University of Connecticut

[illegible]

Arzuaga, Margarita	Puerto Rico	Austin, Nancy Byrne
A.B. in Ed. 1952, University of Puerto Rico		A.B. 1957, University of Maryland
Aval, Adeline Syndra	D.C.	Austin, Shirley L.
Avered, Bernard Ralph	Md.	Aval, Bertha Christine
Av. Anthony Stanley	D.C.	Autry, Avis Mackey
Ashley, Virginia S.	D.C.	B.Mus.Ed. 1958, Madison College
Ashley, Warren Delaplane	D.C.	Avedisian, Saranello Grayson
Avaland, Calvin K.	Iowa	Avellar, Karl Bruce
B.S. 1957, Iowa State College of Agriculture and Mechanic Arts		Avery, Anthony Parks
Ashley, Gordon Shaw	Md.	Awad, Alex Ralph
B.S. 1957, U. S. Naval Academy		Artell, Edward Marion
Ashtmore, Betty Ann	Md.	B.S. 1948, U. S. Naval Academy
Ashton, Mary Ann	Va.	Ayers, Joseph William
B.S. in Ed. 1951, Madison College		B.S. 1948, Purdue University
Ashtum, Leo Ashtum	Calif.	Ayers, Reginald Lee
A.B. 1955, Union College		Aylman, Anna
Ashtum, Robert Freeman	Minn.	Aylman, Arsen
B.S., B.B.A., M.S. in I.E. 1958, University of Minnesota		A.B. 1958, The George Washington University
Asptov, Speridian Alexander	Va.	Ayob, Gauda
Asstun, Marjorie Elane	D.C.	Ayora, Gaston Enrique
Asstun, Sanford	D.C.	Ayoub, Edmund
B.S. in C.E. 1958, Purdue University		A.B. 1952, Antioch College
Atney, Bonnie Lee	D.C.	Azerbeygul, Foreydoun
Atchell, Nathan	Thailand	Ariz, Abdul
B.S. 1947, Thailand University		
Atkin, Sidney Thomas	Md.	Babs, Anthony John
Atkins, Alice Mayne	Va.	B.S. 1957, Georgetown University
Atkins, Ann Matson	D.C.	Babashak, John Francis
Atkins, Elizabeth Donaherty		Babb, James Dunnington, Jr.
A.B. 1944, Howard University		Babcock, David William
A.M. 1928, Columbia University		B.S. 1948, University of Florida
Atkins, John Dilland, Jr.	Va.	Balaska, Homer George
B.S. 1947, North Carolina State College		B.S. 1948, Virginia Polytechnic Institute
A.M. in Ed. 1949, The George Washington University		
Atkinson, Audrey Eldridge	Va.	Babcock, Stover Lee, Jr.
Atias, Dean Noyes	Md.	Baldone, Margery May
A.B. 1955, The George Washington University		A.B. 1953, Capital University
Atlas, Rayd	Va.	Balbione, William Peter
Atwater, James L.	N.C.	Balser, Edward Ralph
A.B. 1954, North Carolina State College		Bal, Norman
A.M. 1957, University of Pennsylvania		A.B. in Ed. 1945, University of Istanbul, Turkey
Atwood, Roger Maurer	Minn.	Balza, Harry John
A.B. 1957, Carleton College		Baldman, L. A. David
Atwood, Fern David	Mo.	Baldmeyer, Katherine Annette
B.S. in M.E. 1957, University of Missouri		Balk, William
Auld, William Howard	Va.	A.B. 1948, University of Illinois
Auld, William Vincent	D.C.	M.S. 1953, University of California
B.S. 1948, The George Washington University		M.P.A. 1956, Harvard University
Auerbach, Ernest Sigmond	Md.	Balke, Donald Lee
A.B. in Govt. 1956, The George Washington University		A.B. 1958, Yale University
Auerbach, Harry	Va.	Baker, Philip Talbert
Auerbach, Rufus Dee		A.B. 1957, Stanford University
B.S. 1958, Oregon State College	Va.	Bakson, Elsie Cecilia
Auerbach, James	Pa.	Bakson, Ruth
Auld, Barbara Ann	D.C.	Bakson, Tamara
A.B. 1958, Livingston College		Bakson, Douglas Joseph
Auld, Joan Margaret	N.Y.	Baker, Mary Kay
Auld, Robert		Bakson, Gary David
B.S. 1957, University of Pennsylvania		Bakson, Donald D.
Austin, William Howard	D.C.	Baker, Anne Virginia
Austin, Carl Frederick	D.C.	Baker, Howard Samuel
Austin, Dale Andrews	D.C.	A.B. 1957, Wesleyan University
Austin, Donald Lee	Va.	Baker, Stephen Van Dyke
Austin, Edwin Cogswell		B.S. in M.E. 1954, University of Puerto Rico
		Balla, R. O. F.
		Barnes, Ann McCarrell
		Barnett, Joyce Marilyn

Students Registered

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[illegible]

Banister, Helen Barbara	D.C.	Barnes, Margie Williamson	D.C.
Banister, Bonnie Jean	Calif.	Barnes, Raymond Van Dyck	D.C.
Banks, Elena Adams	Md.	Barnes, Reatha Elaine	Mich.
B.S. in B.A. 1945, Indiana University		B.S. 1957, Howard University	Mich.
Banks, Gary Frank	Va.	Barnes, Robert Greeley	Mich.
Banks, Isaac M.	D.C.	B.S. 1953, U. S. Naval Academy	
B.S. 1950, Agricultural and Technical		Barnett, Edward Samuel	
College of North Carolina		A.B. 1958, Gustavus Adolphus	
Banks, Isaac Edward, Jr.	Neb.	College	
Banks, James Mae	D.C.	Barnhart, Clarence Paul	
B.S. 1954, South Carolina State		A.B. 1950, Lebanon Valley	
College		College	
Banks, Virginius Hubson, Jr.	Va.	B.S. M. 1941, University of Maryland	
Banks, William B.	D.C.	Barnes, Robert Miller	
A.B. 1948, Howard University		Barnes, James Edward	
Banks, William Frank	D.C.	B.S. 1957, Georgia Institute	
B.S. 1946, Texas Agricultural and		Technology	
Mechanical College		Barnes, Gloria Kay	
M.S. 1958, University of California		A.B. 1958, Southern Methodist	
at Los Angeles		University	
Banta, Joseph Harry, Jr.	D.C.	Barnes, Milton Aaron	
Banta, William Jay	D.C.	Barnes, Ralph Gregory	
Barnes, James Astel Mearns	Egypt	B.B.A. 1954, University of Pittsburgh	
Barnes, Susan Kimmie	Va.	Barnes, Thomas Francis	
Barnes, Annie D.	D.C.	B.S. 1957, Pennsylvania State	
B.S. 1951, Longwood College		University	
Barber, Herman Wendell	D.C.	Barnes, Theodore Joseph	
A.B. 1947, Washburn Municipal		Barn, Arnold Benjamin	
University		A.B. 1956, The George Washington	
Barber, John Howard	Calif.	University	
A.B. 1944, Stanford University		Barr, Helen Sagmaster	
M.S. in Meteorology 1946, California		A.B. 1958, Bryn Mawr College	
Institute of Technology		Barr, Mason, Jr.	
A.M. in Econ. 1958, University of		A.B. 1957, Haverford College	
Wisconsin		Barr, Ronald Sutherland	
Barber, Edna Cooper	Md.	B.S. 1958, Louisiana Institute of	
B.S. 1942, East Texas State		Technology	
Texas College		Barnes, Jerry Ronald	
Barber, Lewis	Pa.	Barnes, James L.	
Barber, Anthony Louis	Calif.	Barnes, James Robert	
Barnes, Robert James	Pa.	Barnes, John Lafayette	
Barnes, Angela	D.C.	Barnes, Lela Lucille	
Barnes, Jose Carlos Duque	Pa.	Barnes, Marcia	
Barnes, Noel Charles	Va.	Barnes, Norma Podosek	
Barnes, Caroline Theresa	Md.	B.F.A. 1949, University of	
Barnes, Carol Smith		Pennsylvania	
A.B. 1944, Tulane University	D.C.	Barnes, Donald Michael	
Barnes, Paul Walter		A.B. 1948, The George Washington	
B.S. 1945, U. S. Naval Academy		University	
B.S. 1948, Texas A&M Institute		Barnes, Anne Kay	
of Technology		Barnes, Anne Rogers, Jr.	
Bardens, Charles Margaret	D.C.	A.B. 1948, Dickinson College	
A.B. 1948, Duke University	Mich.	E.D.M. 1941, Boston University	
Bard, John George		Barnes, Louis M.	
A.B. 1947, Calvin College		B.S. 1948, Tennessee Institute	
A.M. 1948, University of Michigan	Ala.	Barnes, Margaret Elizabeth	
Barnes, Charles Raymond		Barnes, Margaret Elizabeth	
B.S. 1951, Tulane University	Pa.	A.B. in Ed. 1947, The George	
Barnes, Michael George	Va.	Washington University	
Barnes, Percy Ann	D.C.	Barnes, Robert Kegan	
Barnes, Robert Allan	D.C.	Barnes, Paul Joseph	
Barnes, Mary Louise	N.Y.	B.S. 1948, New York University	
Barnes, Edward Lee	Mich.	Barnes, Wayne Leonard	
A.B. 1946, Yale University	D.C.	B.S. 1948, U. S. Military Academy	
Barnes, Susan	D.C.	M.S. 1958, University of Virginia	
Barnes, Robert Young	Va.	Barnes, Kathleen Margaret	
Barnes, Robert Elton		B.S. 1951, University of Maryland	
Barnes, Carolyn Rita	D.C.	Barnes, Robert James	
A.B. 1946, Virginia College	Mich.	Barnes, Ronald James	
Barnes, Cary Allen	Md.	B.M.E. 1947, New York State	
Barnes, Gerald Douglas	Md.	Maritime College	
Barnes, John Peter III	Va.	Barnes, Blair Boyce	
Barnes, Lawrence Almon, Jr.		Barn, Lorraine Estelle	

Baker, James Lawrence	Ohio	Baker, Walter Rolly	D.C.
Baker, M. J. Currier	Md.	B.S. 1928, Teachers College	
Baker, The George Washington		Baldwin, James Whitlock	Md.
Baker, Richard Allen	Ind.	Banta, Charles Shannon	Md.
B.S. 1927, Pomona University		Banta, Eugene Percy	D.C.
Baker, Edward A.	Md.	Banta, Robert Waverly	Va.
B.A. 1926, F.M. 1941, Boston		Bauer, Arthur William, Jr.	Nev.
Baker, Earl Rex	Md.	Bauer, Lloyd	Va.
B.S. M.F. 1951, West Virginia		B.S. 1912, Waynesburg College	Idaho
Baker, Kenneth Allen	Va.	Baugh, Viola Marie	
Baker, Van A., Jr.	Md.	A.B. 1929, University of Idaho	D.C.
Baker, Hays James	Va.	Baum, Arthur Michael	Va.
M.B. 1942, U.S. Military Academy		Baum, Robert Isaacson	
Baker, Stephen Joseph	Pa.	A.B. 1927, Bucknell University	D.C.
A.B. 1925, University of Maryland	Md.	Baumgardner, Evelyn Marie	D.C.
Baker, A. J. Benson	Calif.	Baumgardner, Walter Lawrence	D.C.
A.B. 1925, University of California		A.B. 1925, The George Washington	
Baker, E. L. Aquila	D.C.	University	Va.
Baker, E. L. Lurie	Va.	Baumgardner, Jack Edward	
Baker, Hope Campbell	Va.	B.S. in P.E. 1934, The George	
Baker, Margaret Balian	Wis.	Washington University	Va.
Baker, Stephen	D.C.	Bauer, Robert	
B.S. 1925, University of Wisconsin		B.S. 1927, University of Florida	
Baker, Arthur J. June	D.C.	H.E.E. 1927, Massachusetts	
Baker, Joseph Theodore	D.C.	M.S. in E.E. 1928, Massachusetts	
Baker, Mary Anna	Md.	Institute of Technology	
B.S. 1925, University of Wisconsin	Va.	Baxter, Emma	Turkey
Baker, Arthur Sinclair	Md.	M. of Law 1924, University of	
Baker, Howard Lee	Ind.	Portland, Turkey	
Baker, William Randolph	Va.	Bayer, Daniel Mack	Va.
B.S. 1925, Drexel Institute	Pa.	Bayer, Howard Lawrence	D.C.
Baker, Anthony Stephen	Md.	Baylor, Al Monroe	Turkey
Baker, Michael Angelo	Md.	Baylor, Eugene Louise Henry	Va.
A.B. 1928, Harvard University		Baylor, Edward Stanley	D.C.
Baker, Harvey A.	D.C.	Baylor, Robert Lewis	Va.
Baker, Jay	Md.	A.B. 1928, Temple University	
A.B. 1928, Catholic University of		B.D. 1924, Princeton Theological	
America		Seminary	
Baker, Robert Hugh	D.C.	Bayer, Walter Price	Va.
A.B. 1928, Wiley College		Baumgardner, Roy F.	Md.
Baker, Walter Thomas	Va.	B.S. in E.E. 1928, Kansas State	
Baker, Mary Elizabeth	Va.	College of Agriculture and	
Baker, Edwin Elizabeth	Va.	Applied Science	
Baker, Albert E. La	D.C.	Baxter, Catherine Harry	Md.
Baker, Charles A.	N.Y.	Baxter, Anthony Thomas	Guam
A.B. 1924, Alabama Agricultural		A.B. 1928, Catholic University of	
and Mechanical College		America	
B.S. 1921, University of Maryland	Md.	Beach, Donald Francis	D.C.
Baker, Robert G.	Va.	Beach, George Herbert, Jr.	Va.
A.M. 1928, Belton College		Beach, Robert Thomas	Id.
Baker, Thomas Charles	Md.	Beach, Robert Oliver	Va.
M.B. 1921, Butler University		Beach, Thomas	Va.
Baker, David Lee	Ind.	Beal, Roy Arnold	Fla.
Baker, Marvin Lebb	D.C.	Beale, Hal of Kentucky	Va.
A.B. 1928, Conley College		Beale, George Winfield	Va.
Baker, Paul Everett	D.C.	A.B. 1928, The Citadel	
Baker, Jasper Cornelius	D.C.	Beale, Thomas Preston	D.C.
Baker, Tena Eliza	N.C.	B.S. 1928, West Virginia State	
B.S. 1928, North Carolina State	D.C.	College	
Teachers College, Winston-Salem		Beale, Barbara	Va.
Ed M. 1945, Columbia University		Beale, Jay Kay	N.C.
		B.S. 1928, Duke University	
		Beale, John Cooke	D.C.
		A.B. 1928, Montana State University	
		Beale, Francis Ruth	Md.
		Beale, Dorothy Clementine	D.C.
		B.S. 1927, D.C. Teachers College	
		Beale, Edward Lewis, Jr.	Va.
		Beale, Richard Myron	D.C.
		Beale, Rolland	Calif.
		A.B. 1924, University of Oklahoma	
		Beale, William Henry	D.C.
		B.S. 1928, Georgetown University	
		Beale, William Harry	Md.

Beary, Alexander David, Jr. B.F.E. 1948, Manhattan College	Md.	Bedford, Dulores Nancy A.B. 1958, The George Washington University	Md.
Beasley, Charles Leslie, Jr. A.B. 1948, M.I.A. 1947, Ohio State University	Va.	Beeman, John Albert A.B. 1948, Denison College	Va.
Beatman, James Whitfield A.B. 1948, Oberlin College A.M. 1947, University of Pennsylvania	Va.	Beemer, William Frederick A.B. 1942, Oberlin College A.M. 1951, Clark University	Md.
Beaton, Robert John B.S. 1942, University of Maine	D.C.	Beer, Bernard B.S. 1946, Brooklyn College	Md.
Beatty, Francis Delmar A.B. 1957, University of Georgia	Va.	Beer, Beverly Lee Beetz, Pamela Anne Beetz, James Richard	Md.
Beatty, William Francis Beatty, Ellaroe A.B. 1948, Kinn College	Md.	Belacchio, Ronald Richard B.S. in F.S. 1951, Georgetown University	Va.
Beatty, Owen, Jr. A.B. 1941, New Mexico College of Agriculture and Mechanical Arts	Ariz.	Beckman, John Barbara Beckman, F. Lynn Beetz, Hamilton Scott	Md.
Beatty, Richard Norton A.B. 1947, Princeton University	D.C.	Beck, Yvonne H. Jette Licence es lettres 1949, University of Bordeaux, France	Va.
Beatty, Claude Leo B.S. 1946, Columbia University	Md.	Behling, Daniel Wayne Behnske, Edward August	Ohio
Beck, Virginia Beckwith, Nelson, Jr. Becker, John Melvin Beckers, Claude Anne Beckers, Crystal Louise Beckers, Russell Douglas Becker, Lucinda C. Beckers, Charles Jerome Beckers, George Arthur B.S. 1954, M. Pherson College J.D. 1958, The George Washington University	D.C.	Behrens, Nicholas Theodore Behrmann, Sandra De Long Beinner, Ronald William Beiser, Joel Bele, Sally Ann Belfield, Brenda Welch Belfield, Stuart Curry, Jr. A.B. 1958, The George Washington University	N.Y.
Beckwith, Janet Marie B.S. 1946, University of Maryland	Kans.	Belknap, William Beeber Belknap, Samuel Mancel A.B. 1948, University of Bridgeport	Conn.
Beck, George Nicholas Beck, Henry Donald Becker, Brian Lester Becker, Doris Jean Becker, Edgar Jacob B.S. 1957, University of Maryland	Md.	Bel, Carolyn Sue B.S. 1948, University of Florida	Pa.
Becker, George Dennis A.B. 1950, Southampton College	Va.	Bel, Charles Bel, Charles Lawrence, Jr. Bel, Corbin Jones A.B. 1946, Wesley College	D.C.
Becker, Lee Louise Becker, Marion Judith Becker, Roland Wayne Becker, Thomas James B.S. 1957, University of Maryland	D.C.	Bel, Eleanor A.B. 1947, The George Washington University	Va.
Becker, William Carmie Beckers, Robert Lee A.B. 1953, M.S. 1955, University of Colorado	Md.	Bel, Ernest Herman Bel, Ernest Geneva Bel, Francis H. Bel, George Maxwell, Jr. B.S. 1948, U. S. Naval Academy	Va.
Beckman, Elaine Rose Beckman, Helen V. Beckman, Doris Louise Beckman, Frederick Schumacher A.B. 1951, Antioch College Beckman, William McCarty Beckwith, Herbert Palmer A.B. 1954, Maryville College Beckwith, Marion Louise A.B. 1948, Rhode Island School of Education A.M. in Ed. 1951, The George Washington University	D.C.	Bel, Harry Clark B.S. 1957, Georgetown University	N.Y.
Beider, George William A.B. 1953, College of the Pacific	D.C.	Bel, Hays H. B.S. 1948, Princeton College A.M. 1957, University of California	Md.
	Me.	Bel, Ivan Francis B.S. in M.E. 1949, The George Washington University	Va.
	Va.	Bel, Mary V. Bel, Michael Louise Bel, Robert Foster A.B. 1950, University of North Carolina	Va.
	Mo.	Bel, Robert William A.B. 1958, The George Washington University	Va.
	N.J.	Bel, Roger Forest Bel, Susan Mary Bel, Thomas Graham B.S. in B.A. 1951, University of Nevada	Calif.

Students Registered

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Ed. Warren Strubel	Va	Berzins, Carl Joseph	D.C.
Ed. Warren Strubel	N.Y.	Berard, Suzanne Jean	Maine
Ed. Warren Strubel	Va.	A.B. 1948, Regis College	
Ed. Warren Strubel		Berberich, Joseph Francis	Va.
Ed. Warren Strubel		Berch, Robert Henry	Iowa
Ed. Warren Strubel		B.S. 1946, State University of Iowa	
Ed. Warren Strubel		Berens, Donald Fred	Ohio
Ed. Warren Strubel		Beverford, Spencer Mazon	Md.
Ed. Warren Strubel		B.S. 1946, L.L.B. 1948, Harvard University	
Ed. Warren Strubel		Bey, George John	D.C.
Ed. Warren Strubel		Bey, Morton	D.C.
Ed. Warren Strubel		Bey, William W.	Va.
Ed. Warren Strubel		B.S. 1946, University of Maryland	
Ed. Warren Strubel		Beynon, Harold Theodore	Wash.
Ed. Warren Strubel		Beynon, Carl	Va.
Ed. Warren Strubel		A.B. 1946, University of Iowa	
Ed. Warren Strubel		A.M. 1948, Purdue University	
Ed. Warren Strubel		Beynon, Paul Richard II	D.C.
Ed. Warren Strubel		Beynon, Gerald Jeanette	Va.
Ed. Warren Strubel		Beynon, Francis Joseph	N.Y.
Ed. Warren Strubel		Beynon, Daniel David	Va.
Ed. Warren Strubel		B.M. 1948, Rensselaer Polytechnic Institute	
Ed. Warren Strubel		Bergman, Mary S.	D.C.
Ed. Warren Strubel		A.B. 1948, Rensselaer College	
Ed. Warren Strubel		Bergman, Melvin George	D.C.
Ed. Warren Strubel		Bergman, Melvin David, Jr.	Texas
Ed. Warren Strubel		Berke, Florence Helen	Ohio
Ed. Warren Strubel		A.B. 1944, Western Reserve University	
Ed. Warren Strubel		Berenson, Melvin	Md.
Ed. Warren Strubel		B.C.E. 1948, College of the City of New York	
Ed. Warren Strubel		Berens, Rose	D.C.
Ed. Warren Strubel		Berens, Melvin	Md.
Ed. Warren Strubel		Berman, Josephine Klara	D.C.
Ed. Warren Strubel		Bergman, Linda Ruth	Md.
Ed. Warren Strubel		Berman, Richard Gordon	Md.
Ed. Warren Strubel		B.S. 1948, University of Maryland	
Ed. Warren Strubel		Berman, Samuel Aaron	Fa.
Ed. Warren Strubel		Berman, Susan Carol	N.Y.
Ed. Warren Strubel		Berman, Valerie Louise	N.J.
Ed. Warren Strubel		A.B. 1948, The George Washington University	
Ed. Warren Strubel		Bernard, Hugh Yarrow, Jr.	Va.
Ed. Warren Strubel		A.B. 1948, University of Georgia	
Ed. Warren Strubel		B.S. 1948, Columbia University	
Ed. Warren Strubel		Bernbaum, Irene Louise	Mass.
Ed. Warren Strubel		Bernault, Nancy Louise	Pa.
Ed. Warren Strubel		A.B. 1948, Notre Dame College	
Ed. Warren Strubel		Bernier, Ruth Patricia Graydon	D.C.
Ed. Warren Strubel		Bernier, Howard Calverley	N.Y.
Ed. Warren Strubel		Bernier, Jeanne Bernice	D.C.
Ed. Warren Strubel		Bernier, Bertha McCauley	D.C.
Ed. Warren Strubel		B.S. 1948, Harris Teachers College, Missouri	
Ed. Warren Strubel		Bernier, Day of Hall	D.C.
Ed. Warren Strubel		Bernier, John Franklin	Maine
Ed. Warren Strubel		Bernier, William Franklin	D.C.
Ed. Warren Strubel		Bernier, Rene Henry	Md.
Ed. Warren Strubel		A.B. 1948, University of Massachusetts	
Ed. Warren Strubel		Bernier, Alan Herbert	Pa.
Ed. Warren Strubel		B.S. 1948, Drexel Institute of Technology	
Ed. Warren Strubel		Bernier, Harold Bernice	Mass.
Ed. Warren Strubel		A.B. 1948, Brown University	
Ed. Warren Strubel		Bernier, Jerome Seymour	D.C.
Ed. Warren Strubel		A.B. 1948, The George Washington University	
Ed. Warren Strubel		Bernier, Leonard Wallace	Va.

Berrian, Mae Adele	Mo	Boutenmuller, Richard Albert	Mo
A.B., Mus.B., 1932, Bethany College		B.S., 1953, College of the City of New York	N.Y.
A.M., 1947, Stanford University		Bevan, Betty Ruth	Mo
A.M. in P. Adm., 1950, The George Washington University		Beveridge, Norwood Pierson	
Berry, Charles White, Jr.	D.C.	A.B., 1932, A.M., 1936, Harvard University	Va
B.S., 1930, New York University		Beverly, Witcher N., Jr.	D.C.
Berry, Estelle Davis	Va	B.S., 1951, Lincoln Memorial University	D.C.
Berry, Kathleen Major	Cald		D.C.
Berry, Kathleen Anne	Mo	Bexila, Owen Richard	Va
B.S., 1957, University of Maryland		Bexila, Leah	Va
Berry, Richard Marshall	Va	Beyer, John Robert	Yugoslavia
A.B. in Govt., 1957, The George Washington University		Beyer, Nancy Carol	Va
Berry, Susan Evans	D.C.	Bexila, John Camelia	D.C.
A.B., 1947, Le Moyne College		Bingham, Lyle Carl	
Berry, William W. A.	Va	Bingham, Lu Bessie Ann	Va
B.S. in L.L., 1954, Virginia Military Institute		B.S., 1948, Howard University	Va
Berryman, Neal Bennett	D.C.	Bickert, Marvin Marie	Va
Bersching, John Burke	N.C.	Bickerton, Gordon Edward	
B.S. in Ch.E., 1958, Notre Dame University		Bickford, Frederick H., Jr.	
Bertelson, Linn Gay	Greg	B.S. in E.E., 1952, University of Denver	Tenn
Bertman, Martin Isaac	N.J.	Billy, Bessie Ray	Mo
Bertsch, Dale Roger	Va	Bidwick, Albert Joseph	N.J.
Berd, Lawrence Herbert	N.J.	A.B., 1955, King's College	
B.S., 1957, Howard Institute of Technology		Bielanowski, Walter Mitchell	Mass
Berlin, Martha M.	D.C.	A.B., 1955, LaFayette College	D.C.
Berlin, Iveta	Mass	Binnick, Roslyn Doris	Va
B.S., 1955, Michigan Institute of Technology		Binnick, Christine McDougal	
Berkow, Lee Watson	Nid	Borer, George Jackson	Va
A.B., 1956, Harvard University		B.S. in E.E., 1957, University of Pittsburgh	
Bert, Gary A.	Mo	Bierly, Robert Foust	D.C.
B.S., 1944, U.S. Naval Academy		A.B., 1945, University of Maryland	Va
M.F.A., 1958, The George Washington University		Bierman, Don Edward	
Bert, Robert Ramsey	N.Y.	Bierman, George Raymond	Mo
B.S. in Ch.E., 1951, Lehigh University		B.M.E., 1945, The George Washington University	Cald
Bert, Robert Ellis	Va	Bierwagen, Ronald Walter	D.C.
B.B.A., 1954, University of California		Bigsane, Helen	
Bert, Stephen Louis	D.C.	Bilecky, Adam	
A.B., 1944, Kenyon College		A.B., 1948, B.S., 1955, Ohio State University	
Bester, Joanne Lucia	Va	Biles, Alice Henderson	Mo
Bestgen, John Gerhardt, Jr.	Mass	A.B., 1945, Johnson C. Smith University	Mo
B.S. in Ch.E., 1955, University of Massachusetts		Billingsley, Alice M. Schnell	Mo
Bessie, Frances Ellen	Va	A.B., 1953, University of Buffalo	Pa
Bessinger, Rachel Adele	D.C.	Bilmanis, C. Thomas	
Bessie, George	W.Va	Bilowick, Nicholas M.	Mo
A.B., 1957, Marshall College		B.S. in Ed., 1947, Pennsylvania State University	Va
Bessie, Margaret Catherine	D.C.	B.S. in Ed., 1947, Pennsylvania State University	
Bessie, Edward Volen	Utah	Bilowick, Nicholas M.	
Bessie, Frances		B.S. in Ed., 1947, Pennsylvania State University	
B.S., 1950, Brigham Young University		Bilowick, Nicholas M.	
Betta, Richard Wilson	Va	Bilowick, Nicholas M.	
Betta, William Edward	Texas	Bilowick, Nicholas M.	
B.S. in E.E., 1958, Oklahoma State University		Bilowick, Nicholas M.	
Betta, Mary Elizabeth	Mass	Bilowick, Nicholas M.	
Bettwy, David Strayer	Va	Bilowick, Nicholas M.	
Baur, George Price	Mo	Bilowick, Nicholas M.	
A.B., 1944, Centre College		Bilowick, Nicholas M.	
Baxter, Bonita Jean	D.C.	Bilowick, Nicholas M.	
Baxter, Bonita Albert, Jr.	W.Va	Bilowick, Nicholas M.	
B.S. in M.E., 1956, Northwestern University		Bilowick, Nicholas M.	

[illegible]

Babik, Josef	Pa	Bond, Gorman Morton	
B.S. 1926, Trenton College		Bond, Harry Isaiah, Jr.	D.C.
Boccucci, Rosalie D.	D.C.	B.S. 1940, University of Maryland	
Bock, James Bernard	N.J.	Bond, Henry Nelson	
A.B. 1953, Columbia University		Mus.B. 1958, Peabody Conservatory of Music	Ma
M.P.A. 1955, University of Michigan		Bender, Erwin Allen	
A.M. 1957, Yale University		B.S. in Phar. 1952, The George Washington University	Pa
Bode, Frederick Augustus	Calif.	Bonfanti, Reno Elwood	Va
Bode, Hans Robert	Va	A.B. 1941, University of Pittsburgh	
Bode, Mary A. Elizabeth	Va	Bonham, Daniel Henry	
Bolker, David Henry	Ohio	B.S. 1943, Pennsylvania State Teachers College, Harrisburg	Head
A.B. 1936, Harvard University		Bonacker, Robert Morton	
Bolton, Carl Marshall	Va	Honors, Lemper University	
Bolton, Carl Theodore	Pa	A.B. 1952, The George Washington University	Va
A.B. in Govt. 1954, The George Washington University	N.C.	Bony, Austin Jerome	
Borchi, Henry Louis	Va	B.S. 1914, College of the City of New York	D.C.
Boehly, Lawrence William	Pa	A.M. in Govt. 1956, The George Washington University	
Borick, Harold, Jr.		Boutwell, Aaron Earl	Va
B.S. 1944, M.S. 1952, Massachusetts Institute of Technology	D.C.	B.B.A. 1956, Gordon State College	
Borlin, Robert Day	Va	Bonner, Frederick Marion	D.C.
Borlin, Harold Louis II	Argentina	Bonner, James Rowan	D.C.
Boer, Roberto Ricardo	Ind	Bonner, Linda Lee	
Boutter, John William	Ma	Bonner, Lillian Dorothy	Va
Boutz, Louis Joseph	Paraguay	Bonner, Betty Lawson	
Bogarin, Jorge Enrique	Ma	B.S. 1952, Boston University	Va
Bogart, Walter J.	Va	Book, Stanley	
Bogart, Jack Lee		B.S. 1952, West Virginia University	
B.Met.E. 1956, Rensselaer Polytechnic Institute	Del	Bosker, David Carlton	
Bohan, Michael Edward		Bosker, Edward Neely	
A.B. 1948, Lehigh College	Va	A.B. 1941, Furman University	
Boblin, Kenneth Henry		Boskum, Hoyt Ulmer	D.C.
B.S. 1952, Massachusetts Institute of Technology	Va	B.S. 1949, Clemson Agricultural and Mechanical College	
Bols, Robert Dewey	Va	Bosch, Sheila Dorothy	Va
B.S. 1952, University of San Francisco	Ma	Bosche, Helen Hoffman	Va
Bohn, Walter John		Bosche, Paul	D.C.
Boise, James William		Boschrein, Regula Simone	Va
A.B. 1952, The George Washington University	Ma	A.B. 1946, Radcliffe College	
Boliver, Gerald Paul		Bosch, Phillip Jackson	Ma
A.B. 1916, The George Washington University	Va	Bosch, Rexford George	N.J.
Bok, David Curtis		Bosch, William Aris	
A.B. 1931, Stanford University		Bopp, Frank William	La
L.L.B. 1954, Harvard University	Va	Boswell, Carl Roy	
Bok, Sissela Ann		A.B. 1955, Warner Lutheran College	
A.B. 1957, The George Washington University	D.C.	Boswell, John James	
Boks, Tatiana Stanley	D.C.	Boswell, John James	
Boland, James	D.C.	A.B. in Govt. 1957, The George Washington University	
Bolden, Restford Coleman	D.C.	Boswell, Bonnie Kathleen	
Bolger, Frances	Mass	Boswell, Wayne E. Gordon	
B.S. in Ed. 1950, Massachusetts State Teachers College, Fitchburg	Va	B.S. 1948, A.M. 1958, American University	
Boll, Richard Lee		Boswell, Gertrude Houghton	
B.S. in Ch.E. 1946, University of Southern California	Ma	Boswell, Henry M.	
Bolster, David A.	Calif.	Boswell, Carmela	
Bolter, Delano Woodrow	Va	Boswell, Annie Catherine	
Bolton, Edythe Wainer		Boswell, Robert Lewis	
B.S. in Ed. 1949, University of Maryland	Fla	Boswell, Janet Alexander	
Bolton, James Henry		Boswell, Harold Mark	
A.B. 1941, Florida State University	Mass	Boswell, A. Russell Jack	
Bonnallie, Joan Ellen		A.B. 1956, The George Washington University	
B.S. 1945, University of Massachusetts	Ma	Bostniber, Ernest	
Bonanno, Placido Frederick	Ma	Boston, Donald Charles	
Bombast, Helene Constance		Bosin, Sylvia Estelle	
A.B. 1948, The George Washington University		Bosma, Mary Catherine	
		Bossett, Carl John	
		B.S. 1955, U.S. Military Academy	

Students Registered

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Students Registered				567
Thomas Ray	Va	Bowler, Eugene Patrick	MD	
University of Kansas		B.S. 1937 M.S. 1938, Pennsylvania State University		
James Hubbert	D C	Bowling, James Walter	W Va	
John University	N C	Bowling, Rufus Stewart	Mid	
Ed. 1931 A.M. in Ed. 1936.	Va	A.B. 1935 The George Washington University		
The George Washington University		Bowman, Anthony George	D C	
Armed Forces Institute	Pa	A.B. 1938 Pennsylvania State University		
The George Washington		Bowman, David Patrick	Calif	
Ed. 1933 A.M. in Ed. 1948.	D C	Bowen, John Thomas	D C	
The George Washington University		B.S. 1937 University of California		
Gold, Harry Gooder	D C	Bowyer, William C., Jr.	Va	
B.S. in Ed. 1948 Ed M. 1949.	Mid	B.S. 1939 Pennsylvania State College		
Donald Lane		Boyer, Elizabeth Gaudin	Va	
Donald E. Howard	Mid	B.S. 1937 Michigan State University		
Russell Fleurette	Ma	of Agriculture and Applied Science		
Robert Dean	Del	Boyd, Howard Thomas	Mid	
University of Ck. 1932.	Mid	B.M.E. 1939 The George Washington University		
University of Maryland		Boyd, John Wright, Jr.	Fla	
Ed. 1934 A.M. in Ed. 1935.	D C	B.S. 1934 U.S. Naval Academy		
University of Florida	Fla	Bowd, Martha Ann	Va	
Robert James	D C	Bowd, Melvin	D C	
University of Virginia	D C	Bowen, Ruth E. and	D C	
Thomas Sweadner	D C	B.S. 1937 D.C. Teachers College		
University of Maryland	Mid	A.M. 1939 New York University		
Low Luzzan	Mid	Bowd, William Cornelius	D C	
Howard University	D C	B.S. 1938 D.C. Teachers College		
University of Florida	D C	Boynton, Oliver Cleveland, Jr.	Ark	
The George Washington	D C	Boyer, Anne Catherine	Va	
Boyd Battle		Boyer, Rosamary Cecelia	D C	
University of Georgia		Boyer, Dorothy F.	D C	
University of Maryland	La	Boyer, Lester James	D C	
University of Indiana	Mid	A.B. 1936 Duke University		
University of Cambridge University	Va	B.S. 1939 U.S. Maritime Marine Academy		
University of Cambridge University	D C	Bonle, Albert Louis	Pa	
Bonle, Robert Alford		Bowen, Florence Joseph	Va	
University of Maryland	Va	B.S. 1937 University of Maryland	D C	
University of Maryland	D C	Bowen, Michael Wayne		
University of Southern	Va	A.B. 1935 College of William and Mary		
University of Southern	Calif	A.M. 1937 Western Maryland University	Ma	
University of Southern		Bowman, Edward Wayne	Va	
University of Southern		Bowwell, Lucius K., Jr.		
University of Southern		B.S. 1937 Georgia Institute of Technology		
University of Southern	D C	Bracken, Dwight Clavin	D C	
University of Southern		A.B. 1939 The George Washington University		
University of Southern	D C	Bryant, Harry Leonore, Jr.	Pa	
University of Southern		B.S. 1937 Georgia Institute of Technology		
University of Southern	Va	Brantley, James Wendley	D C	
University of Southern	D C	B.S. 1939 D.C. Teachers College		
University of Southern	W Va	Brantley, John Kenneth, Jr.	Va	
University of Southern		Brantley, Maria Louise	D C	
University of Southern		Brantley, Nancy Katherine	D C	
University of Southern		Brantley, Thomas Philip	W Va	
University of Southern		Brantley, James Lee, Jr.	D C	
University of Southern		B.S. 1937 College of the Holy Cross		
University of Southern	D C	Brantley, James Edward	Mid	
University of Southern	Mid	Brantley, John Henry	Fla	
University of Southern	Mid	Brantley, Joyce Ann	Mid	
University of Southern		Brantley, James Adair	Va	
University of Southern	D C	Brantley, Mary Murray	D C	
University of Southern		Brantley, Robert Bruce	Mo	
University of Southern		B.S. 1937 University of Missouri		

Brothers, Donald Wallace	Md.	Brown, Mary Bennett	Md.
Broun, Sarah	D.C.	A.B. 1928, Western Maryland College	Md.
Broughton, Thomas Gibson, Jr.	Va.	Brown, Mary Louise	Md.
B.L.E. 1959, Catholic University of America		Brown, Michael Douglas	D.C.
Brouillard, Rex Lee	Ohio	Brown, Michael Edward	D.C.
B.S. 1957, University of Maryland		A.B. 1957, The George Washington University	D.C.
Browder, Virginia Nabila	Va.	Brown, Monte Ray	D.C.
Brown, Anne Thomas	Va.	Brown, Morton Nathan	D.C.
A.B. 1925, University of Minnesota		Brown, Norbert Delaney	Md.
Brown, Ann Wadsworth	D.C.	B.S. 1950, Morgan State College	
Brown, Arthur Middleton	Md.	Brown, Nora Kay	D.C.
B.S. 1945, Maryland State Teachers College		A.B. 1945, Wilson College	Va.
Brown, Barbara Ann	Md.	Brown, Oliver Goldsmith	
Brown, Betty Chapman	D.C.	Brown, Orla Irene	
A.B. 1941, King's College		B.S. 1941, Northwestern University	
Brown, Beverly Andrea	Va.	A.M. 1957, The George Washington University	
Brown, Carl Robert, Jr.	Va.	Brown, Fama Preston	
A.B. 1950, University of Michigan		Brown, Francis Marie	
Brown, Charles Edward	D.C.	Brown, R. J. Dubois	
Brown, Collins, Lawrence	Va.	Brown, Richard Clay	
Brown, Edward William	D.C.	Brown, Richard Stephen	
Brown, Emily Taylor	Va.	B.S. 1942, Maryland State Teachers College	
A.B. 1954, Shepherd State College		Brown, Robert	
Brown, Evelyn L. G.	D.C.	M.S. 1949, New York University	
B.S. 1946, D.C. Teachers College		Brown, Robert Maurice	
Brown, Ernest Walter, Jr.	Va.	B.S. 1941, University of Alabama	
B.L.E. 1959, University of Florida		Brown, Ruth Elizabeth	
Brown, Ethel M.	Md.	A.B. 1941, University of Alabama	
Brown, Evelyn Carmen	D.C.	Brown, Sherena Emily	
Brown, Geoffrey John Hutton	D.C.	B.S. 1957, D.C. Teachers College	
Brown, Glover Cleveland	Del.	Brown, Stanley Marie	
A.B. 1977, University of North Carolina		Brown, Terence Leroy	
Brown, Hulan James	Va.	Brown, Thelma Louise	
Mr. Page 1957, Colorado School of Mines		A.B. 1953, Colby College	
Brown, Harry Silby, Jr.	Mo.	Brown, Thomas Connet	
A.B. 1952, University of Missouri		A.B. 1951, Tulane University	
Brown, Hugh Thomas	Va.	Brown, Virginia Sharr	
Brown, James Edward	Va.	A.B. B.M.S. 1954, Monmouth College	
B.S. 1953, Virginia Union University		Brown, William Clifford	
Brown, James Richard	Kans.	Brown, William Edward	
Brown, James Hensley	N.Y.	A.B. 1954, Wheaton College	
A.B. 1942, Southern Methodist University		Brown, William Hamilton, Jr.	
Brown, Jay Robert	Ind.	B.S. & L.L.B. 1958, Alabama Law Center, Tuscaloosa	
B.S. 1942, University of Illinois		Brown, William Maxwell A.	
Brown, Jefferson B.	Va.	A.B. 1956, Duke University	
Brown, John Ficker	Va.	Brown, William Ray	
Brown, Jonathan Gary	D.C.	Brown, Linda Forrest	
Brown, Lee Roy, Jr.	Md.	A.B. 1977, A.M. 1928, Howard University	
B.S. 1950, University of Alabama		Brown, Edward Vincent	
M.S. 1956, The George Washington University		B.S. 1956, New York University	
Brown, Lee Phaedon	D.C.	Brown, Eugene Ann	
Brown, Lisa Jennings	R.I.	Brown, Margaret Ann	
A.B. 1957, Charleston College		Brown, William Robert	
Brown, Louise Smith	Va.	B.C.E. 1957, Cornell University	
A.B. 1945, Morgan State College		Brownell, Mary Pauline	
A.M. 1949, New York University		Brownell, John Hunsington	
Brown, Malinda Louise	Va.	B.S. 1956, Cornell University	
A.B. 1973, Marshall College		Brownell, Wilfred John	
Brown, Monica	D.C.	A.B. 1952, M.S. 1954, University of Wisconsin	
Brown, Monique Catherine	Va.	Brown, Franklin William	
Brown, Mary Ann Rita	D.C.	Brown, David Lewis	
A.B. 1974, Mount St. Joseph's University		A.B. 1942, University of Wisconsin	
Brown, Mary Ann Tyler	D.C.	Bru, Norman James	
B.S. 1956, Virginia Union University		A.B. 1956, University of California	
Brown, Mary Anatha	D.C.		

Students Registered

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Bourne, Robert Robinson	Pa	Buck, Robert Max	MI
B.P. 1928, University of Delaware		B.S. in E.E. 1924, Worcester	
Bourne, Michael Mark	D.C.	Professor, Institute	
Bourne, William Foster	Md	Buck, Walter Warren, Jr.	Fla
Bourne, Gregory	Md	Buckmaster, David	R.I.
Bourne, Thomas Agnes	Bouva	A.B. 1928, University of Iowa	
Bourne, William Theodore, Jr.	Va	L.L.B. 1928, The George Washington	
Bourne, Arthur Henry	Va	University	
Bourne, Frank Spier	Md	Buckley, Mable Leo	D.C.
Bourne, John Richard	Va	A.B. 1928, Pennsylvania State	
Bourne, William College	Va	University	
B.P. 1924, Johns College	Ala	Buckner, Edward Thomas	Va
Bourne, Nancy Stevens	Pa	Buckner, Barbara Jean	Mich
Bourne, John Albert	Md	Buckley, Joseph	Va
Bourne, Mable Christine	Va	Budge, Dorothy Helen	Va
A.B. 1928, Trinity College	D.C.	Budge, Robert Roy	D.C.
A.M. 1922, Catholic University of	Md	Buckley, Eugene Margaret	N.J.
America		Buckley, Vernon Maurine	Vt
Bourne, Louise Benson		B.S. 1921, Utah State Agricultural	
A.B. 1928, University of Virginia	D.C.	College	
Bourne, William, Jr.		M.B.A. 1928, Harvard University	
Bourne, Louis Lee	Idaho	Buckley, Robert Clark	Mo
Bourne, Robert Elsworth	D.C.	A.B. 1924, University of Missouri	
Bourne, Van Gleet	Va	Buck, Kenneth Warren, Jr.	D.C.
A.B. 1928, University of Alabama	Fla	Burges, George Franklin, Jr.	Pa
Bourne, University of Richmond	Va	B.S. in Philo. 1927, University of	
Bourne, George Anne		Pennsylvania	
B.P. 1922, Georgetown	Va	Burkham, James Louis	Va
Bourne, Mable Gott	Md	Burke, Claude Allen	Va
A.B. 1928, Trinity College		Burke, Frederick Denman	Md
L.L.B. 1922, The George Washington	D.C.	A.B. 1925, Yale University	
University		Burr, Maudyn Jean	N.Y.
Bourne, Mable Wood	D.C.	A.B. 1921, Middlebury College	
Bourne, Ruth Wren	D.C.	Burkalek, Stanley Herman	Md
Bourne, William Francis		B.S. 1928, Pennam University	
B.P. 1928, University of Michigan	Mich	Burkack, Camille Pyra	D.C.
Bourne, William Anthony	N.Y.	Burkack, Pamela Caryl	Va
B.P. 1924, University of Maryland	N.Y.	Burkack, John Francis	Va
Bourne, Thomas	Va	Burkack, Joseph Jay	Idaho
Bourne, Thomas College	D.C.	B.S. 1924, Brigham Young University	
Bourne, Louise Matthews	Va	Burkack, Stephen	Md
Bourne, Mary Washington College	D.C.	A.B. 1927, Williams College	
Bourne, Thomas	Md	Burkack, William George	N.Y.
B.P. 1928, The George		B.M. 1927, New York State	
Washington University		Maxine College	
Bourne, George Stevenson		Burkack, Leonard Zissman	D.C.
Bourne, Kay Boyde	Va	A.B. 1928, University of Maryland	
Bourne, Kenneth Blain	Mich	Burke, David Clinton	Ohio
Bourne, University of Wisconsin	Va	Burke, Joseph Louise	Md
Bourne, Thomas	Wis	Burke, Dorothy Frances	Va
A.B. 1928, The George	D.C.	A.B. 1928, Ford College	
Washington University		Burke, William Frank	Md
Bourne, Louise Moore		A.B. 1927, University of Kansas	
Bourne, R. University of Maryland	Md	Burke, Chas	Thailand
B.P. 1928, University of Maryland	Va	Burke, John Michael	D.C.
		A.B. 1924, Princeton College	
		M.B.A. 1928, Harvard University	
		Burke, Robert David	Mass.
		Burke, Thomas Rags	D.C.
		Burke, James Crandall, Jr.	Va
		Burke, Eugene Stegman	Va
		A.B. and J. Russell, Marcell College	
		Burke, Edward Victor	Va
		B.S. in Ed. 1928, Pennsylvania State	
		Teachers College, Kittanning	
		Burke, Philip Ada	D.C.
		Burke, Francis Ryan	Va
		Burke, David Clark	Va
		B.S. 1928, The George Washington	
		University	
		Burke, Harry Franklin	Va
		B.S. 1921, University of Maryland	

Bardwell, John Stanley	Md	Butrell, Carl	Pc
B.S. 1948, Morgan State College	Va	Burke, Carolyn White	Va
Bartlett, James Earle	N Y	A.B. 1946, Ag. in South College	Md
Bartlett, Mary Josephine		Burke, John Calhoun	
A.B. 1956, Catholic University of		B.S. 1947, U.S. Naval Academy	
America		Burnell, Robert M. Smith	Me
Bartlett, Archdale Lonsdale	Va	A.B. 1955, Wesleyan University	Pc
Bartlett, Arnold Joseph	N Y	Burns, Louis	
Bartlett, Paul William, Jr.	N Y	Burns, Ruby Jane	
Bartlett, Wendell	D C	B.S. 1918, D.C. Teachers College	S C
Bartlett, Francis Veasey	Md	A.M. 1917, New York University	N Y
Bartlett, James Lanning, Jr.	Md	Burns, Harry A.	Va
Bartlett, James Michael	Va	Burns, Julia Phillips	Va
Bartlett, James R. Smith, Jr.	Md	Burns, William S., Jr.	
B.S. 1957, University of Maryland		Burns, William, Jr.	
Bartlett, Joseph J.	Va	Burns, Lawrence Arthur, Jr.	Tenn
Bartlett, Joseph Patrick	Va	B.S. 1911, University of Delaware	Me
B.S. 1938, Maryland State University		Burns, Ralph Amory	
Bartlett, Kenneth Stanley	D C	Burns, Robert	
Bartlett, Laura Holmes	D C	Burns, Stanley	
A.B. 1942, Clark College		A.B. 1917, College of the City of	Va
A.M. 1941, New York University		New York	
Bartlett, Martha Frances	Fla	A.M. 1937, New York University	
B.S. 1947, Florida State		Burns, Walter Edgar	Leva
University		B.S. 1946, Worcester Polytechnic	Va
Bartlett, Mary Beverly	D C	University	
A.B. 1945, University of Georgia		Burns, William	
Bartlett, Thelma Kanakian	Md	Burns, William	
Bartlett, Arthur Pomeroy, Jr.	Md	Burns, William	
A.B. 1941, Temple University		A.B. 1941, Kent State University	Ugh
Bartlett, James Ignatius	Pa	Burns, William B.	Va
B.S. 1946, Pennsylvania State		Burns, Louise Howard	Ugh
University		Burns, Regina	
Bartlett, Joseph M.	Md	Burns, Norman Thomson	Pc
A.B. 1946, George Peck University		A.B. 1946, Mountain Young University	Me
Bartlett, Robert Regan	Va	Burns, Karl Mack	Va
B.S. 1947, George Peck University		Burns, Richard Joan	Pc
A.M. 1947, The George Washington		Burns, Francis Wayne	
University		Burns, E. Arthur, Jr.	
Bartlett, Minnie H. R.	D C	A.B. 1947, The George Washington	Va
Bartlett, Lyle Thompson	Va	University	Pc
B.S. 1947, University of		Burns, George William	Pa
Georgia		Burns, Norman	
Bartlett, Malcolm Mack	Va	A.B. 1942, Waynesburg College	N Y
Bartlett, Norman Charles	Va	Burns, Robert	Me
B.S. 1947, University of Texas	N Y	Burns, Robert James	Me
Bartlett, Arthur Russell		Burns, William Jeanette	N Y
A.B. 1946, Otis College	Tenn	Burns, William	
Bartlett, Martin Max		Burns, David Frank	Pc
A.B. 1946, University of Maryland	S C	Burns, M. Paul	W. Va.
Bartlett, Robert Francis		Burns, William	
B.S. 1946, Clemson Agricultural College	N J	Burns, William	
Bartlett, George James	D C	Burns, William	
Bartlett, Josephine Barbara	Va	Burns, William	
Bartlett, John M. Smith		Burns, William	
B.S. 1944, U.S. Merchant Marine		Burns, William	
Academy	Va	Burns, William	
Bartlett, Theresa Frances	Md	Burns, William	
Bartlett, Anne Marjorie	Me	Burns, William	
Bartlett, John		Burns, William	
B.S. 1946, Georgetown University	D C	Burns, William	
Bartlett, Henry Stanley	Md	Burns, William	
Bartlett, John	Va	Burns, William	
Bartlett, John Gerald, Jr.		Burns, William	
A.B. 1943, University of Rochester	Ala	Burns, William	
Bartlett, Martin L.		Burns, William	
A.B. 1946, Howard College		Burns, William	
A.M. 1946, Georgetown University	Me	Burns, William	
Bartlett, Robert E. Smith		Burns, William	
B.A. 1947, University of	D C	Burns, William	
Minnesota	D C	Burns, William	
Bartlett, Stanley Paul	D C	Burns, William	
Bartlett, Patricia Ann		Burns, William	

Callan, M. Catherine	D.C.	Cannava, Ernest John	N.Y.
A.B. 1928, Ohio Wesleyan University		A.B. 1937, American International College	Ohio
Callaway, Kenneth Mauer	Va.	Cannon, Eugene Paul	Ind.
Callison, Gordon, Mace	N.Y.	B.S. 1952, University of Kentucky	
Callison, John Frederick	Va.	Cannon, John Andrew	
Calloway, John Henry	Va.	LL.B. 1940, Southeastern University	
Calloway, James Richard	Del.	B.M.E. 1958, The George Washington University	Mont.
Calvert, Paul Anthony	D.C.	Cannon, Margaret Ona	
Calvert, Audeline Joyce	Va.	Cannon, Rose Warren	
Calvert, Clara Elizabeth	D.C.	A.B. in B.A. 1951, LL.B. 1957, Montana State University	Pa.
Calvert, John Patricia		Cantor, Jay M.	
B.S. 1937, The George Washington University		B.S. in E.E. 1956, A.B. 1957, University of Pennsylvania	Ind.
Calvin, John E.	Ind.	Cantor, Merle Gavin	Ind.
Calvin, Robert Canella	N.J.	Cantrell, Robert Wendell	Ind.
B.S. 1940, Rutgers University		A.B. 1958, The George Washington University	D.C.
Cameron, Ada	D.C.	Canty, George	D.C.
Cameron, Helen Loretta	D.C.	B.S. 1912, University of Pittsburgh	Ind.
A.B. 1947, Washington College		Capehan, Lino Demetrios	
Cameron, Macie Frazier	D.C.	Capehan, Edward Shannon, Jr.	Fla.
Camaran, Dent Bruce	Va.	B.S. 1944, U. S. Naval Academy	D.C.
A.B. 1952, University of California at Los Angeles		Carp, Alvin	
Cameron, Harry Frank, Jr.	Calif.	Capps, Anna Joyce	N.C.
A.B. in C.E. 1955, Stanford University		Capps, Arnold Ray	
Cameron, Marion Kane	Va.	B.C.E. 1958, North Carolina State College	Va.
B.S. in Ed. 1931, Temple University		Capps, Joe Roy	
Cameron, Robert S.	Calif.	A.B. 1950, University of Texas	Ind.
A.B. 1941, University of Southern California		Capps, William Lee	Pa.
M.L.A. 1957, Columbia University		Capps, Alphonse Edward	Puerto Rico
Cameron, William Horace	Va.	Capps, John Robert	N.C.
B.S. 1942, University of Maryland		Capps, Maria Mercedes	
Cameron, Frank Charles	D.C.	Carech, Barbara M.	
Campbell, Ann Harriet	Va.	Card, Harold Henry, Jr.	
Campbell, Catherine Jean		B.S. in M.E. 1948, University of Rhode Island	
A.B. 1948, The George Washington University		LL.B. 1954, University of California at Los Angeles	Ind.
Campbell, David Eugene	Calif.	Card, Margery Lee	
Campbell, Eliza Elizabeth	D.C.	Cardaci, Joseph McLendon	D.C.
B.S. in E.E. 1956, University of California		B.S. 1956, College of William and Mary	Ohio
Campbell, John, Jr.	Va.	Cardacia, Lucrezia, Cecilia	
B.S. in E.E. 1956, University of California		Cardelino, Paul Thiers	
Campbell, John	Va.	D.V.M. 1954, Texas Agricultural and Mechanical College	Va.
A.B. 1924, University of Washington		Cardinale, Anthony	
Campbell, Lawrence Ray	D.C.	B.S. 1952, D.C. Teachers College	Ind.
B.S. in B.A. 1957, University of Virginia		A.M. in Ed. 1958, The George Washington University	Va.
Campbell, Maria Margaret	D.C.	Carey, Charlton Joseph	Mass.
Campbell, Scott V.	Va.	Carey, Gary Kay	Mass.
Campbell, Thomas Patrick	Pa.	A.B. 1958, University of Colorado	
Campbell, William Lawrence	Ind.	Carey, John Joseph	
B.S. 1950, University of Nebraska		Carey, Marjorie Lucia	Va.
Campbell, Joseph Paul	Ind.	A.B. 1952, The George Washington University	D.C.
B.S. 1951, Pennsylvania State Teachers College		Carey, William Theodore, Jr.	Ind.
Ed.M. 1957, Pennsylvania State University		Carinio, Georgia Cristina	Ohio
Campbell, R. William	Va.	Carl, Virginia Hulbert	Ohio
Campbell, G. Eugene	Va.	A.B. 1947, The George Washington University	Mass.
Carl, Albert Philip	D.C.	Carle, Melvin Anthony	
B.S. in E.E. 1955, University of Missouri		Carlisle, John Philip	
Carleson, Lee P.	D.C.	Carlin, Sandra	
Carby, Thomas Yellow	Ind.		
A.B. 1954, University of Virginia			
Carruth, Patricia	D.C.		
Carruth, Linda N.	Ind.		
Carruth, Vernon Dore	Va.		
A.B. 1951, University of California			
Carruth, David William, Jr.	D.C.		
Carruth, Lora Abner			

Students Registered

575

[illegible]

[illegible]

[illegible]

Christensen, Walter Clyde B.M.E. 1955, Georgia Institute of Technology	Va	Clark, Barry Loomis B.S. in M.E. 1946, Northwestern University	Ill
Christey, Lewis Scott A.B. 1934, University of Washington	Wash.	Clark, Cathie Lee B.S. 1937, A.M. 1939, George Peabody College for Teachers	Me
Christian, John Francis B.S. 1939, Illinois Institute of Technology	D.C.	A.M. 1933, Scarritt College for Christian Workers	Me
Christensen, Percy Perival Christiana, Gilbert Philip Christie, Carl Gordon B.S. 1929, U.S. Naval Academy	D.C. Va. D.C.	Clark, Ernest Burrell B.S. 1940, West Virginia Wesleyan College	D.C. W.V.
Christie, Robert Charles Christman, Caroline Christman, William I. Christman, Clifford Carl Chu, Yen Tzu Ch' B. 1939, Central Institute of Physical Science, China	Mass. Md. Va. Md. China	Clark, Florence Shelton Clark, Harvey Leroy A.B. 1948, Lincoln University M.S. 1953, Howard University	W.V. Md.
Ch' Chang Hwa A.B. 1943, Korea University	Thailand Korea	Clark, James Harry Clark, John Berry B.S. 1955, University of Maryland	Va. D.C.
Chang, In Joen Church, Betty Cranford A.B. 1953, Mary Washington College	D.C. Va.	Clark, John Charles B.S. 1951, St. Joseph's College	D.C.
Church, Herbert Matthew B.S. 1939, University of Richmond	Va.	Clark, Malcolm Cameron A.B. 1943, The George Washington University	W.V.
Church, Lawrence Brehaut Church, Lloyd Eugene A.B. 1943, West Virginia University D.D.S. 1944, University of Maryland M.S. 1951, The George Washington University	Va. Md.	Clark, Michael John Clark, Miles Munton A.B. 1943, Manchester College	W.V. Md.
Church, Maury Curtis A.B. in Ed. 1957, The George Washington University	Va.	Clark, Patrick Brown Clark, Thomas Cole Clark, Robert Lee Clark, Ruth Elizabeth Clark, Vivian Clark, Virginia Chappel B.S. 1939, Columbia University	D.C. W.V. D.C.
Clark, Robert Clarence A.B. 1937, University of California at Los Angeles	Calif.	Clark, Virginia Louise A.B. 1947, A.M. 1949, Howard University	W.V.
Corcoran, Andrew B.S. in Ind.Arts 1951, Pennsylvania State Teachers College, California	Md.	Clark, Wiley Clark, William, Jr. A.B. 1945, San Jose State College	Calif.
Confrani, Mario Anthony Cordi, Joseph Emilio A.B. 1946, Boston University	D.C. Mass.	Clark, William Rowley B.S. 1934, Thomas Wesleyan University	W.V.
Cornic, John, Jr. A.B. 1946, University of Pittsburgh	Va.	Clark, Dorothy Jerome Clark, Edgar H. Cramer Clark, Paul Douglas, Jr. Clark, Rex Stewart, Jr. A.B. 1949, Cornell University M.S. 1957, The George Washington University	D.C. W.V. D.C. W.V.
Coston, Kamuran Coston, Mehlika Coston, Tonia Coston, Thomas Octavio, Jr. Costenbaum, Lewis Albert Cott, David Arthur A.B. 1947, University of Washington	Turkey D.C. D.C. N.I. D.C. Wash.	Clarke, Walter Sheldon A.B. 1947, Yale University	D.C. W.V.
Cotton, John Henry Cotton, Allison Hughes B.S. 1941, Maryland State Teachers College, Bowie	D.C. Md.	Clarke, William Mitchell Clarke, Timothy James Clarke, Edward Hoge A.B. 1948, University of Richmond	W.V. W.V. W.V.
Cotton, Harold Glen Cotton, Carolyn Doris Cotton, William Francis Cotton, Daniel Grand Cotton, Stephen Michael A.B. 1948, Catholic University of America	D.C. D.C. Va. Conn.	Clarke, Timothy James Clarke, David May Clarke, Charles Lee David Clarke, Paul Douglas, Jr. Clarke, Margaret Louise Clarke, Robert H. Henshaw Clay, John Peter A.B. 1945, Dental College Clay, Robert Howard B.S. 1947, University of Kentucky	W.V. W.V. W.V. W.V. W.V. W.V.
Clark, Anna James, Jr. A.B. 1941, University of Virginia	Va.	Clayton, Merrill David B.S. in C.E. 1948, Howard University	W.V.
Clark, Anna Marie A.B. 1941, Bowdoin College A.M. 1948, University of Pennsylvania	Va. Md.	Clayton, George Joseph Cleary, John Hubert Clem, Bonnie Lee	W.V. W.V.
Clark, Anna Marie	Va.		

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Students Registered

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Michael Mangiel	Md.	Cook Joseph Allen	Md.
Kathleen Ann	Va	A.B. 1933, University of Maryland	
Michael James	Md	Cook Nancy	D.C.
Georgetown University		Cook Peter Allen	Md
W. Mason		Cook Robert William	Va
Ann Margaret	Va	Cook Joseph Adam	Pa
John Mitchell	Va	B.S. & C.E. 1927, Drexel Institute	
Kenneth John	Va	at Philadelphia	
Thomas Jr.	Va	Cook Martin Markin	Va
Thomas Hudson	Va	Cook Raymond Kenneth	Calif
Western University	Conn	B.S. 1927, University of Maryland	
Edward	Va	Coxley Austin Craig	N.C.
Brickwater College		Coxley Lawrence Allen	Va
Russ Ricker	N.C.	Coxley Benjamin Franklin	D.C.
College		Coxley Samuel Frederick	D.C.
College of Misericordia	D.C.	Coxley August	D.C.
Id		Coxley Wade Hamilton	D.C.
Id		Coxley Barbara Ann	D.C.
Id		Coxley Rex Herbert Jr.	S.C.
Id		A.B. 1936, Furman University	
Id		Coxley Earl Thomas	Va
Id		B.E. 1928, The George Washington	
Id		University	
Id		Coxley Ernest Edward	Md
Id		B.S. 1930, Amherst University	
Id		Coxley George Madison	Va
Id		B.S. & P.E. 1897, Pennsylvania	
Id		State University	
Id		Coxley Gertrude Vivian	Va
Id		B.S. 1927, A.M. 1928, Columbia	
Id		University	
Id		Coxley Henry Charles	D.C.
Id		A.B. 1935, University of Maryland	
Id		Coxley Joseph George	Va
Id		B.S. 1927, D.C. Teachers College	
Id		Coxley James William	N.Y.
Id		Coxley Joseph Van Motte	Tenn
Id		A.B. 1924, Indiana Wesleyan	
Id		University	
Id		A.M. 1927, University of Denver	
Id		Coxley Joseph	D.C.
Id		A.B. 1927, Harvard University	
Id		Coxley Martin de George	Fla
Id		A.B. 1928, Brown University	
Id		Coxley Richard Clarence	Va
Id		B.S. 1926, Michigan College of	
Id		Medicine and Technology	
Id		Coxley Joseph Taylor	D.C.
Id		Coxley William George	D.C.
Id		A.B. 1927, Clark University	
Id		Coxley Yvonne Milton	Va
Id		Coxley David Frederick	Calif
Id		Coxley W. A.	Calif
Id		A.B. 1926, University of Oklahoma	
Id		Coxley Sidney	Va
Id		B.S. 1926, Virginia Polytechnic	
Id		Institute	
Id		Coxley Monica Elaine	D.C.
Id		Coxley George Nathaniel	Va
Id		Coxley Andrew John Jr.	D.C.
Id		Coxley Peter Joseph	N.Y.
Id		Coxley Joseph Alexander	Va
Id		Coxley Philip Lee	Ind
Id		B.S. 1927, Indiana University	
Id		Coxley Robert Hamilton	D.C.
Id		Coxley William Kenneth	Calif
Id		A.B. 1927, Florida University	
Id		Coxley Eugene	Pa
Id		Coxley Anne Louise	D.C.
Id		A.M. 1927, University of Florida	
Id		Coxley Victor Aaron	Florida River
Id		A.B. 1928, University of Florida	
Id		A.M. 1928, Columbia University	

			French West Africa
Cordes, Matthew Martin	Va.	Conditally, Staka	
Cordova, Harold Philip	Md.	Course 1964, Faculty of Law and	Va.
Cordray, Rose Marie	Ga.	Economic Sciences, France	D.C.
Cordua, Russell Joseph	Md.	Courson, Jack Thomas	D.C.
B.S. 1951, Salem College		Coulter, Kenneth Brewster	D.C.
Correns, Robert Frederick	D.C.	A.B. 1950, Princeton University	
Corey, Peggy Stephens	Md.	Cox, Venus Marie	Va.
Corey, William Sanford	Md.	Courson, Walter Bingley	D.C.
A.B. 1958, Dickinson College		B.S. 1941, Harvard University	Va.
Cornish, William Sinclair	Va.	Courson, Kelley D.	D.C.
Corley, Karl Coates	Md.	Courson, Martha Briston	Va.
B.S. 1958, Trinity College		Courson, Phyllisann	Md.
Corley, Kelly Ozelle	Va.	Courson, Don Dow	Ab.
B.S. 1944, Mississippi College		Courson, James H.	Va.
Corn, Lawrence Henry, Jr.	Va.	B.S. 1924, Clemson College	
Cornbrooks, James Ernest	D.C.	Courtney, Joseph Christian III	
B.S. 1967, Florida State University		A.B. in Ed. 1953, The George	Mich.
Cornelius, Gerald Keith	Va.	Washington University	
Cornell, Robert Hicks	Md.	Courtney, William F.	Va.
B.S. 1948, Furman University		A.B. 1947, Miami University	Va.
M.S. 1950, Michigan State University		Courson, Alphonse Paul	
Cornell, Ronald S.	N.Y.	Courson, Ruth Hubbard	N.Y.
B.S. 1954, Queens College		A.B. 1958, The George Washington	
Cornfield, Russ Butler	Va.	University	D.C.
A.B. 1914, University of California		Coutsourakis, Constantine M.	
at Los Angeles		I.E. 1918, University of Michigan	
Cornwell, Clifton Van Culin	Va.	Couzens, Frederick Leo	Va.
Cornwell, Ralph F.	D.C.	B.S. 1950, D.C. Teachers College	Ind.
B.S. 1951, D.C. Teachers College		A.M. 1954, New York University	D.C.
A.M. in Ed. 1950, The George		Cowell, Elizabeth Jean	
Washington University		Cowell, Jack Philip	D.C.
Cornell, Marilyn Mae S.	Calif.	Coverdale, Louvenia Alford	
A.B. 1957, University of California		B.Mus. 1958, Howard University	
Cornigan, Gordon Frederick	Va.	A.M. 1953, Columbia University	
A.B. 1952, University of Toronto		Cowdery, Richard Casson	Utah
Cornish, Elizabeth Louise	N.J.	B.S. in C.E. 1952, University of	
Cornson, James William	Alaska	Colorado	Utah
A.B. 1950, University of New		Cowley, Samuel Parkinson	Ill.
Mexico		B.S. 1950, University of Utah	
Cortes-Hernandez, Hernan	D.C.	Cowley, Irvin Jack	
Cortez, Karen Marie Nowak	D.C.	Cox, Allen Wesley	Ark.
Cox, Donald Martin	Ill.	B.S. 1942, U.S. Naval Academy	
Cox, George Anthony	N.Y.	Cox, Alfred Seymour	Va.
Cox, Benjamin Peter	D.C.	A.B. 1957, University of Arizona	
Cox, Ryan	Md.	Cox, Daniel Townsend	D.C.
B.H.E. 1950, The George		B.S. 1940, University of Maryland	
Washington University		Cox, Eleanor Dawson	W.Va.
Casta, Augusta Louise Carrel	Va.	Cox, Eric Frederick	Va.
A.B. 1912, Tulane College		A.B. 1954, Dickinson College	Md.
Casta, Rosalind	Brazil	Cox, James Anthony	
L.L.B. 1947, Catholic University of		Cox, James Henry IV	Va.
Rio de Janeiro		Cox, M. Louise	
Costakis, Ann	D.C.	Cox, Marvin Rountree	
Costantino, James	Mex.	B.B. 1947, Yale University	
B.S. in M.E. 1948, University of		Cox, Ruth V. Bell	
Massachusetts		B.S. 1956, Syracuse University	D.C.
Couture, Paul	D.C.	Cox, William Edward	
Couture, Frances Anna	D.C.	A.B. 1954, Bucknell University	No.
Couture, Jane Stuart	Wyo.	Coxen, Edward Donald	
Couture, Patricia William	D.C.	A.B. 1957, University of Nevada	D.C.
Couture, Roger James	Va.	Coy, Charles Edward	N.J.
A.B. 1945, University of Cincinnati		A.B. 1957, University of Nevada	
M.B.A. 1941, Harvard University		Cornick, Elizabeth Mary	Ill.
Cowan, Robert Harrison	Md.	Coverelli, James Dominick	Pa.
Cowan, Fritz M. Jones	N.C.	B.S. 1946, St. John's University	
Cowan, George Roland	Md.	Cobb, Carlos William	Calif.
Cowan, Dennis Eugene	Va.	Cobb, Richard Bruce	
A.B. 1953, University of Maryland		A.B. 1957, Duke University	Va.
Cowan, Mary E. Jones	Va.	Crabbe, William Mervin, Jr.	
Cowan, James Henry, Jr.	Va.	A.B. 1950, The Citadel	D.C.
B.S. in F.E. 1917, Duke University		M.P.A. 1958, Harvard University	
Cowan, Alfred Charles	Md.	Coulton, Georgeville Hayward, Jr.	
B.S. 1951, University of Maryland		B.S. 1947, University of Missouri	
		Cubano, Mary Esther	

Calhoun, Thomas Randall	D.C.	Crisley, Charles Eugene	Va
Calhoun, Thomas Randall	Va	B.S. 1914, Madison College	
Calhoun, Thomas Randall	N.Y.	Calhoun, Catherine Marie	D.C.
Calhoun, Thomas Randall		Calhoun, John Frederick	Ind
Calhoun, Thomas Randall	D.C.	L.L.B. 1917, National University	
Calhoun, Thomas Randall	Va	Crisley, Simon Warren	Va
Calhoun, Thomas Randall	D.C.	Crisley, George	Md
Calhoun, Thomas Randall		A.B. 1926, Licium Moisa Nicora of	
Calhoun, Thomas Randall		And, Romania	
Calhoun, Thomas Randall	Pa	L.L.B. 1921, King Ferdinand I	
Calhoun, Thomas Randall	Va	University, Romania	
Calhoun, Thomas Randall		B.D. 1922, Colgate Rochester Divinity	
Calhoun, Thomas Randall	D.C.	School	
Calhoun, Thomas Randall	D.C.	Crist, James Howard, Jr.	Va
Calhoun, Thomas Randall		Crist, James Lee	Va
Calhoun, Thomas Randall		Crist, John Joseph	Va
Calhoun, Thomas Randall		Criswell, Andrew Elmer	Va
Calhoun, Thomas Randall		Criswell, William Ford	Md
Calhoun, Thomas Randall		Criswell, Paul William Joseph	D.C.
Calhoun, Thomas Randall		Criswell, John Alden	D.C.
Calhoun, Thomas Randall		B.L.E. 1920, Catholic University of	
Calhoun, Thomas Randall		America	
Calhoun, Thomas Randall		Crook, James	D.C.
Calhoun, Thomas Randall		Crook, Marie Edward	Md
Calhoun, Thomas Randall		Crook, Marion Agnes	Va
Calhoun, Thomas Randall		Crook, Warren Reed	Md
Calhoun, Thomas Randall		B.L.E. 1920, The George Washington	
Calhoun, Thomas Randall		University	
Calhoun, Thomas Randall		Crook, William Rayner	Hawaii
Calhoun, Thomas Randall		A.B. 1923, Western Michigan College	
Calhoun, Thomas Randall		of Ypsilanti	
Calhoun, Thomas Randall		L.L.B. 1924, The George Washington	
Calhoun, Thomas Randall		University	
Calhoun, Thomas Randall		Crook, Kenneth Stanley	Md
Calhoun, Thomas Randall		A.P. 1918, Washington Missionary	
Calhoun, Thomas Randall		College	
Calhoun, Thomas Randall		A.M. 1913, Seventh Day Adventists	
Calhoun, Thomas Randall		Theological Seminary	
Calhoun, Thomas Randall		A.M. in Ed. 1924, The George	
Calhoun, Thomas Randall		Washington University	
Calhoun, Thomas Randall		Crook, Louise Caroline	Md
Calhoun, Thomas Randall		B.F.S. 1918, Johns Hopkins University	
Calhoun, Thomas Randall		Crook, Richard Charles	Utah
Calhoun, Thomas Randall		Crook, James Hamilton	Ill
Calhoun, Thomas Randall		B.S. 1921, Boston University	
Calhoun, Thomas Randall		F.M. 1914, University of Illinois	
Calhoun, Thomas Randall		Crook, Eugene James, Jr.	Maine
Calhoun, Thomas Randall		A.B. 1921, Boston College	
Calhoun, Thomas Randall		Crook, John Eugene	D.C.
Calhoun, Thomas Randall		A.B. 1921, Catholic University of	
Calhoun, Thomas Randall		America	
Calhoun, Thomas Randall		Crook, John Pyralis	D.C.
Calhoun, Thomas Randall		A.B. 1923, The George Washington	
Calhoun, Thomas Randall		University	
Calhoun, Thomas Randall		Crook, Dallas Guy	Va
Calhoun, Thomas Randall		Crook, Eugene Allen	W.Va
Calhoun, Thomas Randall		Crook, Robert Vernon	N.C.
Calhoun, Thomas Randall		A.B. 1918, Knox College, Tennessee	
Calhoun, Thomas Randall		Crook, Robert Vernon	Va
Calhoun, Thomas Randall		B.S. in Ed. 1920, Bucknell University	
Calhoun, Thomas Randall		Crook, Leonard E.	N.H.
Calhoun, Thomas Randall		A.B. 1921, New Hampshire State College	
Calhoun, Thomas Randall		Crook, Samuel Purvis	D.C.
Calhoun, Thomas Randall		Crook, Karl August	D.C.
Calhoun, Thomas Randall		Crook, Kenneth Eugene	D.C.
Calhoun, Thomas Randall		B.B.A. 1927, Georgia State College of	
Calhoun, Thomas Randall		Business Administration	
Calhoun, Thomas Randall		Crook, Marie Louise	D.C.
Calhoun, Thomas Randall		A.B. 1921, Columbia University	
Calhoun, Thomas Randall		Crook, I. Frank	Ohio
Calhoun, Thomas Randall		B.B.A. 1921, University of Oklahoma	
Calhoun, Thomas Randall		Crook, James Lee	D.C.
Calhoun, Thomas Randall		Crook, Richard Julian	S.D.

Crowe, George Frederick B.S. in C.E. 1933, University of Washington	Va.	Commey, Kendall A.B. 1949, M.S. 1952, University of Arizona
Crowe, Leonard Fulton A.B. 1951, University of Colorado	D.C.	Commey, Julia Francis Commey, Julia Rose
Crowe, William James, Jr. B.S. 1946, U.S. Naval Academy A.M. 1946, Stanford University	OKla.	A.B. 1949, The George Washington University
Crowell, Gregory Lee A.B. 1957, American University	Md.	Commey, Oscar Neal Commey, Mary Jane
Crowell, Robert Norman Commey, Clara Louise	N.Y.	Commey, John Edward Commey, Joseph de Almeida
Crowley, Edwin Daniel B.S. in E.S. 1943, Georgetown University	Va.	Commey, Irene Frances Commey, William Aron
Crowley, Leo Vincent B.S. 1947, Massachusetts State Teachers College	D.C.	Commey, Joseph Earl A.P. 1942, Washington and Jefferson College
Crown, Mary Frances Crown, Ronald Francis B.S. 1948, American University	Md.	M.S. 1951, Duquesne University Commey, John Earl Commey, Kathleen Arnes
Crowley, Carlton Noble B.M.E. 1950, Clarkson College of Technology	D.C.	Commey, Kenneth August B.C.E. 1954, Clemson Agricultural College
Crudden, David Allen Commey, Florence Genevieve	N.Y.	Commey, Richard Edwards Commey, Susan Elise
Commey, Shirley Vivian Commey, Eugene Abner	Va.	Commey, Michael Francis Commey, Milton James
Commey, Judith Ellen Commey, Howard William	Va.	Commey, Ruth Lillian B.S. 1950, Bowdoin University
Commey, Vernon Mervin Commey, Beverly Anderson B.S. 1948, Ed.M. 1950, University of Minnesota	Pa.	Commey, John May D. Commey, Edward Vincent
Crum, Edmund Parke A.B. 1957, The George Washington University	D.C.	Commey, Joseph Aron A.B. 1947, The George Washington University
Crum, Sherel Toth A.B. 1950, Bowdoin College	D.C.	Curtan, Patricia Lee Curtan, John Joseph
Crum, William Perister B.S. in Aero Eng. 1950, Virginia Polytechnic Institute	Va.	B.E.E. 1955, Manhattan College Curtis, Basil A.B. 1949, M.B.A. 1952, Stanford University
Cruik, Sally Pamela Commey, Douglas Morgan	Va.	Curry, Leonard Charles A.B. 1950, Hampden College A.M. 1951, Johns Hopkins University
Cruik, Marshall Holman B.S. 1949, University of Maryland	D.C.	Curry, Doris Benge A.B. 1951, Northeastern State College M.S. 1950, Oklahoma State College
Cruik, Sam Shaw, Jr. Cruik, Joseph Edward A.B. 1955, St. Bernard's Seminary and College	Va.	Curry, Mary Catherine B.S. in Chem. 1947, New York State College for Teachers A.M. in Ed. 1950, The George Washington University
Cruise, John Emanuel B.S. 1951, Imperial College of Science and Technology, Eng. and Tech.	Ghana	Curry, Mary Catherine Curtis, Raymond Lawrence Curtis, John Louis, Jr.
Cruise, Patrick Herbert Curtis, Beth Helena B.S. 1957, Georgetown University	D.C.	Curtis, Francis Thomas, Jr. A.B. 1954, University of Washington A.M. 1957, Columbia University
Curran, Charles Lerne B.S. in M.E. 1949, Purdue University M.S. in M.E. 1950, Georgia Institute of Technology	Va.	Curry, Kenneth Edward Commey, Mary Emily A.B. 1958, Oregon College
Curran, Margaret W. B.S. 1950, Illinois Institute of Technology	Md.	Curry, Sally Elizabeth Curry, Carolyn Louise A.B. 1958, College of Wooster
Curran, Sam Ann Curry, David Louis B.S. in C.E. 1950, M.S. in C.E. 1957, University of Oklahoma	Md.	Curry, Robert Hunt B.S. in B.A. 1952, Salem College A.M. 1950, University of Washington
Curry, Robert Scott A.B. 1944, Washington and Lee University	Va.	Curry, Robert Donald B.S. in E.E. 1957, University of Michigan
Curry, John Jeremiah, Jr. Commey, Alan Gordon B.S. 1951, M.S. 1956, Virginia Polytechnic Institute	Va.	Curry, Albert Morton B.C.E. 1954, Rensselaer Polytechnic Institute
Curry, Dorothy A.B. 1957, University of Arizona	Va.	

Students Registered

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Edgar, Paul			
Edgar, David Arthur			
B.S. 1956, Indiana State Teachers College	Md.	Damon, Harle Hoyt	Md.
		B.S. 1945, U.S. Military Academy	
		M.S. 1946, University of Virginia	
		Damon, Jack I.	Ariz.
		B.S. 1947, The University of Arizona	
		D. Andler, Lydia Lant	N.J.
		Damon, Richard	Md.
		B.S. 1948, Massachusetts Institute of Technology	
		D'Amico, Mary F.	N.Y.
		Daniel, Ralph Austin	Ark.
		B.S. 1946, University of Arkansas	
		Daniel, Robert Herman	Va.
		A.B. 1938, The George Washington University	
		Daniel, Edward Kent, Jr.	Va.
		B.S. 1941, M.E. 1942, West Virginia University	
		Daniel, Eugene B. Jr.	Md.
		Daniel, George Foster	Md.
		A.B. 1934, Washington College	
		Daniel, Isabelle, nee Cowie	Md.
		B.S. 1944, Washington College	
		Daniel, Maria Davutiana	Va.
		Daniel, Herbert W. H.	Va.
		B.S. 1940, Western College	
		Daniel, Theresa Ann	D.C.
		A.B. 1934, Indiana University	
		A.M. 1939, Columbia University	
		Daniel, Richard Otto	Va.
		Dani, John Nicholas	Pa.
		D. A. Daniel, Richard George	Va.
		B.F.E. 1947, Brooklyn Polytechnic Institute	
		Danzon, Marvin Howard	Va.
		B.F.A. 1940, College of the City of New York	
		M.S. 1941, Columbia University	
		Dapine, Mer Lorraine	D.C.
		Davis, Paul Lorraine	D.C.
		Davies, Eugene Ingram	D.C.
		Davies, Jesse Robert	Md.
		Davies, Paul Pyramus	Va.
		B.S. 1931, American University	
		Davies, Lillian Eugene	Ind.
		B.S. 1930, U.S. Military Academy	
		Davies, Loretta Warren	Ta.
		B.S. 1934, Harvard University	
		M.B.A. 1934, University of Pennsylvania	
		D. B. 1934, The George Washington University	
		Davies, Kenneth Terry	Calo.
		Davies, Harry Thomas, Jr.	Va.
		Davis, Walter Sarah	Va.
		B.S. 1946, Pennsylvania State University	
		Davis, Maria Moore	D.C.
		Davis, Albert Edward	Indonesia
		A.B. 1934, Dackarra School of Education, Indonesia	
		LL.M. 1934, Dackarra School of Law, Indonesia	
		Davies, Tereza Leo	Va.
		Davies, Ann Marie	Md.
		B.F. 1934, University of Missouri	
		Davies, Frances Laine	Md.
		A.B. 1934, University of Missouri	
		M.S.W. 1934, Washington University	
		Davies, Lora	Va.
		Davis, Henry Murray III	P.C.
		Davis, James Carmel	Md.
		A.B. 1934, American College	

Daviesbridge, Betty Jean Brown	D.C.	Davis, Hugh E.	
B.S. 1947, Western Carolina College		Davis, John Samuel	
Ed M. 1952, B.S. in B.A. 1951, University of North Carolina		Davis, John Robert	
Davies, L. Ardy Helena		B.S. 1941, U.S. Naval Academy	Foot
Davis, Va.		M.S.E. 1948, Cornell University	D.C.
A.B. 1946, Stanford University	Va	Davis, John Neil	
Davis, Francis Lynn		B.S. in M.E. 1947, Washington University	
B.S. 1928, University of Richmond		Davis, Kenneth Lee	
Davis, Stuart Carlton	D.C.	A.B. in Govt. 1951, The George Washington University	Mo
Davis, Suzanne	D.C.	Davis, Margaret Stuart	
A.B. 1950, University of Maryland		A.B. in Ed. 1952, The George Washington University	S.I.
Davis, Francis Sigel	Md.	Davis, Martha Evelyn	U
A.B. 1944, The George Washington University		Davis, Martha Houston	
Davis, Marjorie Suzanne		B.S. 1918, Ohio State University	Mo
B.Mus. 1944, Oberlin College		Davis, Milton Bernard	
A.M. 1948, M.F.A. 1949, State University of Iowa		A.B. 1913, University of Pennsylvania	U
Davis, Harold F.		Davis, Nancy Ann	
B.S. 1940, College of the City of New York		Davis, Norman Casper	
Davis, Nancy Elizabeth		A.B. 1950, A.M. 1952, Montana State University	Ch
Davis, Nancy Albert	D.C.	Davis, Ovid Milton	
A.B. 1945, University of the Philippines	Pa.	A.B. 1945, Ohio University	Kin
Davis, John Morris		Davis, Raymond Younte	
Davis, Peter Morris		Davis, Richard Allen	
Davis, Robert Eugene		Davis, Richard Ralph	
A.B. 1940, San Clemente, Inter American University, Puerto Rico		Davis, Robert Jackson	
Davis, Victor		B.S. 1947, University of Maryland	
Davis, Allen Therswall		Davis, Robert James	
B.S. 1943, University of Delaware		Davis, Robert George	
Davis, Anne Yale		Davis, Rosamond Mastendale	
B.S. 1911, University of London		Davis, Stephen D.	
Davis, Ann Northern		Davis, Sylvia May	
Eds. Bowdoin H.		A.B. 1944, Middlebury College	
A.B. 1911, Berea College		Davis, Thomas	
Davis, Belle Lee		A.B. 1916, State University of Iowa	
A.B. 1918, University of North Carolina		Davis, Walter George	
Davis, Bruce Elliott		B.S. 1917, Georgia Institute of Technology	Griff
Davis, Bruce G.		Davis, Wayne Ann	
B.S. in C.E. 1917, Vermont College		Davis, William Cunningham	
Davis, Chester Leslie Jr.		Davis, William Cunningham	
B.S. in E.E. 1927, University of Missouri		A.B. 1920, University of Maryland	
Davis, Clyde Byrd		L.L.B. 1921, The George Washington University	Eng
Davis, Donald McKenzie		Davis, William R. Scholte	
A.B. 1916, University of Maryland		Davis, William Roy	
Davis, Edgar Mary		Davis, William May	
Davis, Elizabeth Cecile		B.S. 1921, State Teachers College, Lansing	
A.E. 1924, Chesham College		Davis, William Stewart	
Davis, Elsie Marie		Davis, William Wesley	
B.S. 1911, New Haven State Teachers College		Davis, William Wesley	
A.M. in Ed. 1947, The George Washington University		Davis, William Wesley	
Davis, Elsie Marie		Davis, William Wesley	
Davis, Frank Minney		Davis, William Wesley	
B.S. 1927, U. C. Teachers College		Davis, William Wesley	
A.M. 1931, New York University		Davis, William Wesley	
Davis, Frederick Whitaker		Davis, William Wesley	
B.S. in E.E. 1927, University of Connecticut		Davis, William Wesley	
Davis, Harriet Tompkins		Davis, William Wesley	
Davis, Helen C.		Davis, William Wesley	
Davis, Henry M. Ray		Davis, William Wesley	
B.S. 1917, North Carolina College at Durham		Davis, William Wesley	
Davis, Herbert Lowell		Davis, William Wesley	
B.S. 1921, University of Virginia		Davis, William Wesley	

Delaney, Joseph			
Delaney, Julia Marie	D.C.	Delaney, Marianne	D.C.
Delaney, Louis Benjamin	Conn.	Delaney, William John, Jr.	Va.
E. P. E. 1941, A.M. in Ed. 1957.	Md.	De la Pena, Levy Raul	Mexico
The George Washington University		de la Pereda, Gonzalo	D.C.
Delaney, Gustav Carl		Law Degree 1944, University of Havana	
Delaney, Frank H.	Va.	de la Puente, Joseph Luciano	Md.
Delaney, Ronald Arthur	Va.	A.B. 1954, University of New Mexico	
Delaney, Noel Henry	Mass.	de la Sierra, Celia Maria	Philippines
E. E. 1949, Carnegie Institute	Va.	B.S. in Ed. 1952, St. Theresa's College,	
Delaney, Edward Oliver		Philippines	
S. E. E. 1949, Oklahoma University	Md.	Delasham, Nancy Morgan	Va.
Delaney, Philip Leroy		de Lask, Donald	Va.
E. I. E. 1957, University of	Pa.	A.B. 1954, Duquesne University	
Delaney, William Paul		De Laverne, Helen Catherine	D.C.
E. J. 1951, Manhattan College	N.Y.	De la Vergne, William Harold, Jr.	D.C.
Delaney, Mirna Reeves		del Campo, Gustavo	Bolivia
E. D. 1958, University of Alabama	Md.	Delmon, Anthony Vincent	Pa.
DeLeon, Mildred Dodson		De Leon, Alberto Vincent	Philippines
DeLeon, Elizabeth Ketchum	Va.	A.R. 1951, A.M. 1954, The University	
DeLeon, Randolph Warren		of Mexico	
DeLeon, Frank Joseph	Va.	Delgado, Concepcion Montenegro	Philippines
DeLeon, M. Litt. 1955, University	D.C.	De Groot, Martha F.	D.C.
DeLeon, M. Litt. 1955, University	D.C.	B.S. 1943, University of Tennessee	
DeLeon, M. Litt. 1955, University	Md.	De la Granda, William Lee	D.C.
DeLeon, M. Litt. 1955, University		De la Granda, William Lee	Md.
DeLeon, M. Litt. 1955, University		Delinger, Stanley Odell	Va.
DeLeon, M. Litt. 1955, University		B.S. 1949, Madison College	
DeLeon, M. Litt. 1955, University		de Lomian, Isella Camilla	D.C.
DeLeon, M. Litt. 1955, University		A.B. 1951, Pennsylvania Institute of	
DeLeon, M. Litt. 1955, University		De Loria, James	
DeLeon, M. Litt. 1955, University		A.M. 1941, The George Washington	
DeLeon, M. Litt. 1955, University		University	
DeLeon, M. Litt. 1955, University		DeLoe, Pauline Marjorie	D.C.
DeLeon, M. Litt. 1955, University		DeLoe, Robert Walter	N.C.
DeLeon, M. Litt. 1955, University		B.S. 1947, Davidson College	
DeLeon, M. Litt. 1955, University		DeLoe, Maria Pyrak	Pa.
DeLeon, M. Litt. 1955, University		A.B. 1951, University of Pittsburgh	
DeLeon, M. Litt. 1955, University		De Loria, Vincent James	N.Y.
DeLeon, M. Litt. 1955, University		B.S. 1957, Davidson College	
DeLeon, M. Litt. 1955, University		del Valle, Katherine Ellen	D.C.
DeLeon, M. Litt. 1955, University		De Mar, James Elliot	Ohio
DeLeon, M. Litt. 1955, University		A.B. 1947, Monmouth College	
DeLeon, M. Litt. 1955, University		A.M. 1949, Stanford University	
DeLeon, M. Litt. 1955, University		De Mauton, Marjorie Paula	D.C.
DeLeon, M. Litt. 1955, University		A.P. 1949, The George Washington	
DeLeon, M. Litt. 1955, University		University	
DeLeon, M. Litt. 1955, University		Demian, Louis Peter	D.C.
DeLeon, M. Litt. 1955, University		Demian, Mary Rose	D.C.
DeLeon, M. Litt. 1955, University		A.B. 1949, St. John's College	
DeLeon, M. Litt. 1955, University		De Mar, Ronald Michael	Pa.
DeLeon, M. Litt. 1955, University		Demian, Ronald Anthony	Md.
DeLeon, M. Litt. 1955, University		Demian, Nicholas Michael	Va.
DeLeon, M. Litt. 1955, University		B.S. 1948, South Dakota State	
DeLeon, M. Litt. 1955, University		College	
DeLeon, M. Litt. 1955, University		De Mauton, Paul Roger	Idaho
DeLeon, M. Litt. 1955, University		Demian, John Joseph	Md.
DeLeon, M. Litt. 1955, University		A.B. 1947, Catholic University of	
DeLeon, M. Litt. 1955, University		America	
DeLeon, M. Litt. 1955, University		Demian, Maria L.	N.J.
DeLeon, M. Litt. 1955, University		A.B. 1958, Maryland State University	
DeLeon, M. Litt. 1955, University		Demian, Gregory H. H. H.	N.J.
DeLeon, M. Litt. 1955, University		A.B. 1955, St. Mary's College	
DeLeon, M. Litt. 1955, University		Demian, Lawrence Meowman, Jr.	P.C.
DeLeon, M. Litt. 1955, University		Demian, Perry LeRoy	P.C.
DeLeon, M. Litt. 1955, University		Demian, Charles Lee	Md.
DeLeon, M. Litt. 1955, University		B.S. in M.E. 1955, Carnegie Institute	
DeLeon, M. Litt. 1955, University		of Technology	
DeLeon, M. Litt. 1955, University		Demian, Robert Abel, Jr.	Va.
DeLeon, M. Litt. 1955, University		D.C. E. 1948, Renaissance Polytechnic	
DeLeon, M. Litt. 1955, University		Institute	
DeLeon, M. Litt. 1955, University		Demian, Gloria	Md.
DeLeon, M. Litt. 1955, University		De Nardis, Louis Harry	D.C.
DeLeon, M. Litt. 1955, University		De Nardis, Louis Harry	Va.

Dent, James Armistead, Jr.	D.C.	Dewey, George, Jr.	D.C.
Dent, William Myrden	Va.	Dewitt, Kurt	Germany
Dervey, Kathleen Mary	N.Y.	A.B. 1941, Reed College	Md.
De Palma, Irene Palmer	D.C.	De Witt, Terry Thompson	Va.
B.S. 1936, Bob Jones University		De Wolf, Robert Olin	
De Peris, James Joseph	N.Y.	B.S. 1957, Pennsylvania State Teachers	D.C.
Depew, Samuel Harry III	Md.	College, Bloomsburg	D.C.
B.S. 1949, Purdue University		Dews, Edwin Terry	D.C.
Depping, Janet Mildred	D.C.	Dhamrunksutana, Poonari	N.Y.
De Quattro, Vincent Louis	Calif.	Dhawan, Madan Gopal	
B.S. 1955, University of California		Diamond, Elaine Nodaja	
Derra, Gene Remy	Va.	A.B. 1954, Ithaca College	
Derksen, Catherine Anna	Md.	Diamond, Horace Williams	
Des Marceaux, Edward	Iran	B.S. 1957, University of	
Derry, Robert Arthur	Mass.	Michigan	
A.B. 1957, Harvard University		Diamond, Joyce	D.C.
Derry, Mary Anne	Va.	B.S. 1951, D.C. Teachers College	Teas.
A.B. in Govt. 1947, The George		Dierckx, Paul Max	
Washington University		Dierckx, Robert Alex	
de St. Arden, Frances Logan	Md.	B.S. 1951, Michigan State University	
De Sarno, Michael John	Md.	Diaz, Hugo	
Descher, Lewis H.	Md.	Diaz, John Andrew	
B.S. 1951, L.L.B. 1955, Washington		B.S. 1944, Iowa University	
and Lee University		Diaz, Yvonne Maria	
de Sette, Gloria Vayla	D.C.	Diddle, Thomas William	
De Simone, James William	Va.	Dillon, Alfred Francis	
B.S. in P.E. 1957, University of Illinois		Dillon, Frederick Newton	
Desmone, Louis	Pa.	Di Cesare, Catherine Frances	
Desmond, Edward James	Mass.	A.B. 1944, College of Notre Dame	
De Souza, Daniel Arthur	Va.	of Maryland	
De Steigler, Russell Joseph	Pa.	Dick, John, Louis Carmelo	
Detmar, Edwin Charles	Md.	di Costa, Carol Jean	
A.B. 1952, The George Washington		B.S. 1957, Simmons College	
University		Dickinson, Charles Edward	
Detmering, Richard	Md.	Dickson, William Ryan	
Detweiler, Dawn	D.C.	B.S. 1956, University of North Carolina	
Detweiler, Harry Grubb	Va.	Dickson, Jean Anne	
B.S. 1956, Pennsylvania State		B.S. 1952, D.C. Teachers College	
Teachers College, West Chester		Dickson, Mary L.	
A.M. in Ed. 1952, The George		B.S. in Ed. 1956, University of Maryland	
Washington University		Dickson, Ruth	
Deuber, Frederick Lee	Ohio	A.B. 1956, The George Washington	
B.S. 1961, Ohio State University		University	
Deubler, Rosanne Helen	Va.	Dicks, Donald Howell	
Deutsch, John Mark	D.C.	A.B. 1955, Clemson College	
Deutermann, Elizabeth Foster	D.C.	J.D. 1944, John Marshall Law School	
A.B. 1957, American University		Dickson, Frederick Asat	
Deutch, Clifford	Pa.	Dickson, Frederick Asat	
Deutch, Michael	Va.	A.B. 1944, University of Nevada	
Devonshire, Ray Lindley	D.C.	Dickson, John Lawson	
Dever, Marion Lee	Va.	Dickson, William B.	
Deverell, Catherine Noble	Pa.	A.B. 1945, University of New Mexico	
Devereaux, William Joseph	Va.	Dickson, William Bruce III	
B.M.E. 1948, Johns Hopkins University		Dickson, William	
Devere, William Eugene	Kans.	A.B. 1954, University of Kansas	
A.B. 1951, Kansas State Teachers		Dickson, Michel Ross	
College		Dickson, William	
De Vito, Vincent Theodore	N.Y.	Dickson, William	
B.S. 1957, College of William and		Dickson, William	
Mary		B.S. in P.E. 1959, University of	
Devlin, Harold Bernard	Va.	Pennsylvania	
Devlin, Leontina Hugh	Md.	Dickson, Frank Earl	
B.Ch.E. 1954, Johns Hopkins University		B.S. 1957, Iowa State University	
De Vore, Philip Wayne	Md.	Dickson, Delta Ann	
A.B. 1947, Lafayette College		Dickson, Harold	
De Vries, Mary Ann	Iowa	B.S. 1956, Maryland State Teachers	
Dew, Edward McMillan	Calif.	College, Frostburg	
A.B. 1957, Pomona College		E.L.M. 1955, University of Maryland	
Dewar, Louise Monica	D.C.	Dinner, Fred Joseph	
A.B. 1942, Oberlin College		Dinner, John Richard	
E.L.M. 1945, Wayne University		Dinner, William Jeffrey	
Dewey, Diana	D.C.	A.B. 1956, Wakeham University	
A.B. 1958, University of Chattanooga		Dinner, Fred Donald	
		A.B. in Govt. 1957, The George	
		Washington University	
		Dietz, Stephen Karl	

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[illegible]

Donahoe, Philip William	M.I.	Dowdy, Sam Gene	Ms
Donahoe, Mary	D.C.	A.B. 1946, A.M. in Govt. 1948, The George Washington University	Vi
Donahoe, Thomas Miller	D.C.	Dowell, Barbara Jean	D.C.
Donahue, William O'Donnell	D.C.	Dowell, Reginald Lawrence	P.C.
Donald, Bobbie Lester	Va	A.B. 1949, University of Denver	P.C.
B.E.E. 1957, The George Washington University		Dowdall, Edward James	P.C.
Donaldson, William Kenneth	Va	Dowdall, Vera Anna	P.C.
B.S. 1956, Yale University		Dowling, Edgar Thomson	P.C.
Donato, Dan, Jr.	Va	Downes, Mary Phelps	P.C.
B.S. 1950, College of Charleston		Downey, Fred McEwen, Jr.	P.C.
Donley, John Pierce II	Ill.	A.B. 1956, Duke University	P.C.
Donohoe, Frances	D.C.	Downey, William Michael	P.C.
Donnelly, James David	N.Y.	A.B. 1951, Shepherd State College	
B.S. 1943, Georgetown University		Downing, Thurston Jennings	
Donnelly, Kenneth Luther	D.C.	A.B. 1947, Oberlin College	Va
Donohue, Joseph Walter	M.I.	A.M. 1948, Oberlin College	P.C.
B.S. 1947, Columbia University		Downs, Michael Henry	P.C.
Donovan, Daniel Gerald	Va	Downs, Ronald Bruce	
A.B. 1951, Bowdoin University		Dowrey, Carl Gordon	
Donovan, Gerard Matthew	Mass.	B.S. 1958, Montana State College	
Donvito, Pasqual Anthony	M.I.	Doyle, Grace Louise	
A.B. 1949, The George Washington University		Doyle, Herbert Aloysius, Jr.	M.
Doonan, Jack D.	Ohio	A.B. 1954, The George Washington University	
A.B. 1955, Ohio University		Doyle, Mahlon Eugene	P.C.
Doucer, Linda Anne	Va	A.B. 1949, B.E.E. 1957, The George Washington University	P.C.
Douder, R. in Abigail	M.I.	Doyle, Mary Rowena	Va
Douder, William Jay	Mass.	Doyle, Mary Sharon	Va
Doune, George Stanley		Doyle, Thomas Francis	P.C.
A.B. 1944, Ohio Wesleyan University		A.B. 1949, Harvard University	
Doutson, Hayner Aurora	D.C.	Drain, Thomas Thorpe	
Drake, Melba, Helen	Ill.	Drake, Daniel O.	
Dreisinger, Elizabeth Suzanne	D.C.	B.S. 1955, University of California	
Dray, Carroll Benjamin, Jr.	Va	M.P.L., S.J.D. 1950, National University	
B.S. in M.E. 1950, University of South Carolina		Drake, Dorothy Georgette	P.C.
Dority, Julian William	Va	A.B. in Govt. 1955, The George Washington University	P.C.
B.S. in E.E. 1949, University of South Carolina		Drake, Eugene	
Dority, Lucy Carter	D.C.	Draper, Elizabeth Keld	Ms
A.B. 1942, College of William and Mary		A.P. in E.E. 1954, A.M. in Ed. 1955, The George Washington University	Ms
Dorn, Carol Louise	Pa.	Draxton, Kenneth George, Jr.	Va
A.B. 1949, Virginia University		Draxton, Karen Louise	
Dorsey, Charles Robert	D.C.	Drayton, Robert David	
B.S. 1950, Maryland State Teachers College, Bowie		Drayton, John James, Jr.	
Dorton, William Maxwell	D.C.	Drayton, Paul James, Jr.	
Douder, Randolph James	Va	B.S. 1948, University of Maryland	
Douder, Richard M.	Conn.	Drayton, Herbert William	
Dougherty, David E.	M.I.	B.S. in B.A. 1951, Economics	
B.S. 1949, Washington College		Drayton, Carl Maria	
Dougherty, Elizabeth Ann	D.C.	Drayton, Suzanne J.	
Douglas, Evelyn M.	Va	A.B. 1950, University of Denver	
A.P. 1957, Kent College		A.M. 1957, Kent College	
Douglas, Frances Gertrude	Va	Dreese, Robert James	
Douglas, Paul Cameron	M.I.	Dreese, Lynn N.	
A.B. 1950, The George Washington University		Dreese, Harry Richard	
Dowd, James Martin	Ill.	Dreese, Eugene A., Jr.	
Dowdell, Matthew McCauley	N.Y.	Dreese, Robert A.	
B.A. E. 1947, McGill University		Dreese, Robert A.	
Dowdell, Nicholas Eugene		Dreese, Robert A.	
A.B. 1951, The George Washington University		Dreese, Robert A.	
Dowdy, Christopher Maria	D.C.	Dreese, Robert A.	
Dove, Donald Albert	Va	Dreese, Robert A.	
Dove, Mary	Va	Dreese, Robert A.	
A.B. 1951, The George Washington University		Dreese, Robert A.	

Students Registered

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[illegible]

Dorrim, Mary Denman	D.C.	Eberhart, Francis Claude	
A.B. 1939, University of Missouri		A.B. 1940, University of Dubuque	
A.M. in Gov. 1947, The George Washington University		LL.B. 1948, University of Florida	
Dotka, Mary Christina	D.C.	Elbert, Joseph Warren	
Duffy, Neil E.	Va	A.B. & Ed. 1950, Pennsylvania State Teachers College, Kutztown	
A.B. 1944, Berea College		A.M. in Ed. 1948, The George Washington University	
Duval, Robert Cathmack	D.C.	Elchert, Gustav	
Duval, Sarah Wright	D.C.	Elbert, James Richard	
Duval, Robert Henry	Ohio	Ph.D. 1958, Goshen College	
Dunaway, James C.	Va	Edwards, Norbert Angel	
Dunaway, William John	Va	Edwards, Marion Patton, Jr.	
B.S. in Phil. 1942, University of Wisconsin		B.S. in C.E. 1945, Virginia Military Institute	
Dwight, David Blair	Pa	Edwards, Mary Tuck	
B.S. 1947, Pennsylvania State University		Edwards, Lewis Dillwyn, Jr.	
Dwyer, Stephen J.	Va	B.S. 1949, University of Maryland	
A.B. 1946, A.M. 1951, University of Buffalo		Edwards, Edward Herman	
Dwyer, Edward Hill	Md	B.S. 1947, U. S. Naval Academy	
Dwyer, Kenneth Lee	Va	Edwards, Henry James	
Dwyer, Roger Donald	Va	A.E. 1955, Western Maryland College	
B.S. 1948, University of Florida		Edwards, Walter	
Dye, Emmett Charles, Jr.	Va	B.S. in M.E. 1948, Michigan State University	
Dye, Cynthia Carolyn	Md	Edwards, Charles Bernard	
Dye, Ivan Dale	D.C.	B.B.A. 1949, University of New Mexico	
B.S. in Ed. 1946, Maryland State Teachers College, Frostburg		Edwards, Charles Bernard	
Dyer, Perry Sinclair	D.C.	B.B.A. 1949, University of New Mexico	
Dyck, Benjamin Bentley	D.C.	Edwards, Charles Bernard	
Dyck, Edward Forrest	Va	B.B.A. 1949, University of New Mexico	
Dyck, Anna	Md	Edwards, Charles Bernard	
Denby, Elizabeth Lyster	D.C.	B.B.A. 1949, University of New Mexico	
E			
Eagan, Charles Gary	Md	Edwards, Charles Bernard	
Eagan, Merrill Abigail	D.C.	B.B.A. 1949, University of New Mexico	
Eagan, Thomas Ray	Pa	Edwards, Charles Bernard	
A.B. 1949, Lebanon Valley College		B.B.A. 1949, University of New Mexico	
Eagle, Lawrence Eugene	Ill	Edwards, Charles Bernard	
Eagle, John Richard, Jr.	D.C.	B.B.A. 1949, University of New Mexico	
Eagle, Frederick Edward	D.C.	Edwards, Charles Bernard	
Eagle, Douglas McCord	Md	B.B.A. 1949, University of New Mexico	
Eagle, Richard Allen	D.C.	Edwards, Charles Bernard	
Eagle, William James	D.C.	B.B.A. 1949, University of New Mexico	
B.M.E. 1948, The George Washington University		Edwards, Charles Bernard	
Easter, George Cornell	Va	B.B.A. 1949, University of New Mexico	
A.B. 1946, Princeton University		Edwards, Charles Bernard	
Easter, Nancy Lee	Va	B.B.A. 1949, University of New Mexico	
Easter, Philip Scharf	D.C.	Edwards, Charles Bernard	
Eaton, Carl Walter	Va	B.B.A. 1949, University of New Mexico	
A.B. in Gov. 1958, The George Washington University		Edwards, Charles Bernard	
Eastwood, Charles Robert	Ohio	B.B.A. 1949, University of New Mexico	
B.S. in M.E. 1946, B.S. in C.E. 1947, University of Virginia		Edwards, Charles Bernard	
M.B.A. 1949, Harvard University		B.B.A. 1949, University of New Mexico	
Eaton, Alfred Wade	Oreg	Edwards, Charles Bernard	
A.B. 1944, University of Oregon		B.B.A. 1949, University of New Mexico	
B.D. 1949, Central Divinity School of the Pacific		Edwards, Charles Bernard	
Eaton, Sandra McDowell	Va	B.B.A. 1949, University of New Mexico	
Eaton, William Eugene	Md	B.B.A. 1949, University of New Mexico	
A.B. 1947, Yale University		Edwards, Charles Bernard	
Ph.D. 1957, Yale University		B.B.A. 1949, University of New Mexico	
Ebel, William Joseph	Md	Edwards, Charles Bernard	
B.S. 1949, M.E. 1954, College of the City of New York		B.B.A. 1949, University of New Mexico	
Ebenfeld, Helene	Va	Edwards, Charles Bernard	

Students Registered

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[illegible]

Ely, Marvin Thomas	W.Va	Epstein, Milton	DC
A.B. in Ed. 1956, The George Washington University		A.B. 1948, New York University	MA
Emerson, Edwin Gayle	Ind	A.M. 1953, The George Washington University	N.Y.
Emerson, Janet Ruth	Va	Epstein, Ruth	
Emmer, Paul Joseph	Md	Epstein, Sylvia Lorna	
A.B. & Ed. 1952, The George Washington University		Epstein, William Harvey	DC
Emmatt, Frank Morris	N.J	A.B. 1945, B.S. in Ch.E. 1950, Columbia University	N.J.
B.S. in M.E. 1957, Tri State College		Epting, Elizabeth Jeanette	
Emmers, Charles L. III	D.C.	Erdmann, Robert Hodgson	Va
Emory, Daniel Wright	D.C.	A.B. 1948, University of Vermont	
Emmons, Luis Gonzaga	N.M.	Erickson, Roger Wayne	
B.S. 1958, Georgetown University		B.S. in M.E. 1950, University of California	Va
Eney, Richard Harris	Va	Ericson, Carl Eric Jon	DC
B.S. 1958, The George Washington University		Erikson, Kenneth Wayne	Tulsa
Eng, Tai Lim	D.C.	Eskilet, Orhan	N.Y.
B.S. in M.E. 1952, Purdue University		Emisse, Hugh Warner	Ohio
Enghere, Norma Joyce	Va	A.B. 1954, University of Rochester	
Engel, Donald Lee	Ill	Ernsberger, Richard Duane	Va
B.S. in Ch.E. 1959, University of Illinois		B.S. 1953, University of Tennessee	DC
Engel, Mary Louise	D.C.	Ernst, Ann	
A.B. 1958, The George Washington University		Ernst, Lucille Marie	Va
Engelhart, Richard William	N.J	B.S. 1952, University of Maryland	
Engelhardt, Henry Akers, Jr.	Md	Erskine, George	Va
Engel and Sheldon	N.Y.	B.S. & Ch.E. 1958, University of Rochester	DC
B.S. 1957, Lehigh University		Ervin, John Shearer	
Engelund, James William	Va	Erwin, Howard Lawson	Va
B.S. in P.E. 1955, The George Washington University		A.B. 1943, Lincoln University	Md
Engelwiler, Russ Lynn	D.C.	Escher, George Fred	Va
Engel, Donald Ray	Va	Escher, William J. D.	
Enger, Edwin Grove, Jr.		Escoutiaux, Raymond E.	
B.S. 1953, Pennsylvania State Teachers College, Mercersville	Calif	Esgain, Albert James	
Engle, Paul Lewis III	Ind	A.B. 1956, A.M. 1958, Ohio State University	Va
Engle, Patricia Jo	Va	LL.B. 1945, Duke University	
B.S. 1951, Pennsylvania State University		Diploma in International Law 1956, University of Cambridge, England	DC
Engelberg, Howard Martin	Md	Ezra, Mary Moore	Va
Engelberg, Susan Martin	D.C.	B.S. in Ed. 1958, Ohio State University	DC
Engelhardt, James Edward	Ohio	Eshelman, James Norman, Jr.	
B.S. in M.E. 1958, University of Notre Dame		Eskew, Charles Robert	Ill
Engler, Asher	Israel	Eskin, Otto Evans	DC
B.S. 1955, Injenicur 1956, Israel Institute of Technology		A.B. 1956, Bowdoin College	DC
Engler, Alvin John	Va	Farr, Robert Louis	DC
B.S. 1957, Carnegie Institute of Technology		Farr, Thelma Jose	ME
Engle, Adrian		Farr, Thomas Jean	
Engelmann, John Westbrock		Farr, Nancy Lee	
A.B. 1955, Washington and Lee University		Farquhar, Edna John	
Engman, Gladys P.	Fla	A.B. 1948, College of the Pacific	KW
Engstrom, Stanley Deem	D.C.	M.S. 1948, University of Cincinnati	
Eng, Peter	D.C.	Farrington, William Arthur	
Eng, Ruth	Fla	Farrington, Alvin Morton	Va
Engle, Michael	Md	B.S. in Ch.E. 1954, Drexel Institute	DC
Engel, Rachel		A.B. 1955, Drexel Institute	DC
A.B. 1955, Western Maryland College	N.D	Farr, Robert Arthur, Jr.	
Engelstein, Gino Oliver		Farr, Robert Arthur	
B.S. 1954, Jamestown College	Ge	B.I.E. 1957, The George Washington University	M
Engels, George Michael		Fitzger, Robert John	
A.B. 1954, Emory University		B.S. in E.E. 1949, Pennsylvania State University	M
A.M. 1955, Columbia University	Calif	Finkleman, Walter Irvin, Jr.	
Epstein, Adolphe Joan	DC	B.S. 1942, University of New Mexico	DC
Epstein, Barbara Lee		A.M. in Ed. 1952, The George Washington University	N.Y.
		Finkbanks, Clarence Arthur	
		B.S. 1950, North Carolina Agricultural and Technical College	
		Finkbanks, Michael Anthony	
		A.B. 1956, Cornell University	

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[illegible]

Farnsworth, William Yates	Va.	Fernstein, Bernard	Calif.
A.B. 1951, Brigham Young University		A.B. 1954, University of Colorado	
Farquhar, Norman James	D.C.	Fest, Ronald	D.C.
Farquhar, Thomas Walsh	Va.	B.S. in M.E. 1956, University of Texas	
Farr, Robert Thomas	D.C.	Fetz, Donald Conrad	D.C.
Farnell, Robert Lee		B.S. 1952, Purdue University	
B.S. 1957, Purdue University		Fetters, Annette Diana	D.C.
Farsell, Thomas George	Pa.	Fetters, Claire Rose	D.C.
A.B. 1954, Pennsylvania State University		A.B. 1956, The George Washington University	
Farrington, Claud Max, Jr.	Md.	Feldman, Barry Norton	D.C.
Farrin, Ella Lou	D.C.	Feldman, Clara Mildred	
Farrin, Herbert Henry	Va.	Feldman, David Edwin	
Farrin, Julia Jessie	Va.	Feldman, Eugene Mae	
B.S. in Ed. 1951, Radford College		Feldman, Judley Allen	
Farnsworth, Michael James	D.C.	Feldman, Tom Allen	
Farr, Frank Joseph	Md.	Feldman, Milton Louis	
Farrish, Alexander Johann	D.C.	Feldman, Mary Anne	
B.S. 1957, The George Washington University		A.B. 1959, University of Maryland	
Fatzinger, Glenn Banks	Pa.	Feldman, Stephen	
A.B. 1957, Lafayette College		A.B. 1957, The George Washington University	
Fawley, Arthur Beckley	Md.	Feldman, Stanley Carl	
A.B. 1949, Fairmount State College		B.S. in Eng. 1958, Tufts University	
A.M. 1950, West Virginia University	Kans.	Feldman, John Arthur	
Faxon, Arnold Kenneth		A.B. 1954, Harvard University	
A.B. 1948, University of Kansas		Feldman, Joseph	
Faxon, Willis Frobenius	D.C.	A.B. 1954, Mount St. Mary's University	
A.B. 1950, Iowa State Teachers College		Feldman, Joseph	
A.M. 1951, University of Florida		A.B. 1954, Mount St. Mary's University	
Favour, Ronald William	Md.	Feldman, Joseph	
B.S. in E.E. 1952, North Dakota Agricultural College		A.B. 1954, Mount St. Mary's University	
Favre, Duane Lee	Ill.	Feldman, Joseph	
B.S. 1952, University of Illinois		Feldman, Joseph	
Faw, John Constantine, Jr.	Va.	Feldman, Joseph	
B.M.E. 1954, Clemson College		Feldman, Joseph	
Fawcett, Clifford William	D.C.	Feldman, Joseph	
B.S. in E.E. 1958, University of Maryland		Feldman, Joseph	
Faxon, Thomas R.	D.C.	Feldman, Joseph	
Fax, Thomas Theodor	Pa.	Feldman, Joseph	
A.B. 1957, The George Washington University		Feldman, Joseph	
Fax, Thomas Theodor	Texas	Feldman, Joseph	
A.B. 1957, The George Washington University		Feldman, Joseph	
Fax, Thomas Theodor	History	Feldman, Joseph	
A.B. 1957, Texas Western College		Feldman, Joseph	
Fatchak, Victor	Va.	Feldman, Joseph	
Fenton, Jefferson Hall	Md.	Feldman, Joseph	
Fenton, William Hugh	D.C.	Feldman, Joseph	
Fenton, Arthur Norwell	N.Y.	Feldman, Joseph	
Fenton, Patricia Ann		Feldman, Joseph	
A.B. 1957, West College	Va.	Feldman, Joseph	
Fenton, John Robert		Feldman, Joseph	
B.S. in E.E. 1954, Pennsylvania State Teachers College, Shippensburg		Feldman, Joseph	
Felton, Albert William, Jr.	Va.	Feldman, Joseph	
A.B. 1951, The George Washington University		Feldman, Joseph	
Feldman, Peter Frances Catherine	Va.	Feldman, Joseph	
Feldman, Ralph Henry	Va.	Feldman, Joseph	
A.B. 1951, The George Washington University		Feldman, Joseph	
Feldman, Charles Albert	Md.	Feldman, Joseph	
Feldman, James Darwood	D.C.	Feldman, Joseph	
Feldman, Victor A.	Mass.	Feldman, Joseph	
Feldman, David Robert Joseph		Feldman, Joseph	
A.B. 1955, Harvard University	D.C.	Feldman, Joseph	
Felton, Edward Jude		Feldman, Joseph	
A.B. 1954, St. Anselm's College	Va.	Feldman, Joseph	
Felley, George Franklin	Va.	Feldman, Joseph	
Felton, George	D.C.	Feldman, Joseph	
A.B. 1957, Benedictine College		Feldman, Joseph	
Felton, Carolyn McHenry		Feldman, Joseph	
A.B. 1951, University of North Carolina		Feldman, Joseph	

Students Registered

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[illegible]

Finn, Joseph Thomas	Md.	Flanagan, Robert Moore
B.S. 1949, M.B.A. 1951, College of the City of New York		Flannery, Robert Seal
Fintgen, William Henry	Md.	Flanagan, Michael John
Finnell, Robert Francis	Md.	Flannery, John Harold, Jr.
Fischer, Mary Jean	D.C.	A.B. 1953, Western College L.L.B. 1958, University of Pennsylvania
A.B. 1952, Dartmouth College of the Holy Cross		Flatt, Harvey Joseph
Fisher, Charles Barber	D.C.	Flennor, Lynn Westrell
Fisher, Edwin Joseph	D.C.	Fleet, Alice West
Fishtone, David	Va.	B.S. 1945, Virginia State College M.S. 1947, University of Pennsylvania
B.S. 1948, College of the City of New York		Fleish, Paul Harvey
M.S. 1951, Brooklyn Polytechnic Institute		A.B. 1937, San Jose State College
Fitz, Tom Judge	D.C.	Flomberg, Morris Marquis
Fitz, Francis Joseph	Va.	Flores, William Edward
B.S. 1941, U. S. Naval Academy		A.B. 1937, University of Maryland
Fitz, Lewis Raymond		Fleming, Clarence Joseph
Fischer, Lynn Frank	Va.	B.S. & C.E. 1952, University of Illinois
Fischer, Philip Benjamin	Ill.	Fleming, Henry Paul, Jr.
A.B. 1952, Adelphi College	N.Y.	Fleming, Peter Ann
Fischman, Marion Doris	Md.	A.B. 1950, San Diego State College
Fischer, Rucka White	N.Y.	Fletcher, Ann Harlow
Fish, Norman Sherman	Pa.	Fletcher, Emma Frances
Fisher, Stephen Carl	D.C.	Fletcher, Janet Douglas
Fisher, Doris Douglas	D.C.	Fletcher, Chapman William
A.B. 1954, Boston University		Hendrix, Chapman William
Fisher, James Harold	Md.	A.B. 1951, College of Wooster
Fisher, John Bruce	Conn.	Fleury, Benedict Thomas
Fisher, John Claude	Md.	A.B. 1954, The George Washington University
Fisher, John Gibson	Va.	Fliden, Len Russell
Fisher, John Guy, Jr.	Va.	Fligner, Howard Wendell, Jr.
Fisher, Kathryn Dolores	Va.	B.S. 1942, B.S. in Edu. 1945, The George Washington University
Fisher, Martha Magdalene	D.C.	Flis, Charles Madison Everett
Fisher, Nancy Lee	Va.	A.B. 1948, Bucknell University M.S. in L.S. 1950, Syracuse University
Fisher, Robert Gerald	Conn.	Flitz, Richard Prescott
Fisher, Thomas Malcolm	Va.	Flisler, Janet Sue
B.S. 1957, Virginia Polytechnic Institute		Flis, James Joseph, Jr.
Fishman, Alan Leonard	D.C.	A.B. 1951, University of Notre Dame
B.S. in Phar. 1957, The George Washington University		Fliss, Sandra Mae
Fisk, Leon William	D.C.	Fliss, Mercedes Hester
B.S. 1949, Georgetown University		Flowers, Paul Emma
Fitz, Nathan Carey	Md.	Flowers, Walter Raymond
A.B. 1911, Amherst College L.L.B. 1913, Harvard University L.L.M. 1916, The George Washington University		B.S. 1950, U. S. Naval Academy
Fitzgerald, Donald Arthur		Flay, Harold Leopold
Fitzgerald, James Raymond	D.C.	Flay, Harold Maria
Fitzgibbon, Margaret Mary	D.C.	A.B. 1957, The George Washington University
A.B. 1947, Dickinson College of the Holy Cross		Flynn, Della Annette
Fitzpatrick, Edward James	D.C.	A.B. 1951, West Virginia Wesleyan College
Fitzpatrick, John Francis	Md.	Flynn, James Taylor
A.B. 1951, York University		Flynn, Paul Charles
Fitzsimmons, John Joseph	D.C.	Flynn, William Leonard
B.S. in P.E. 1951, The George Washington University	Md.	B.S. 1948, Iowa Central University A.M. 1950, Catholic University of America
Flaherty, Thom Antonio	N.Y.	Flynn, William John
B.S. 1951, Gonzaga University		Flynn, Laura Katherine
Flann, Barbara Lee	D.C.	B.S. 1950, Maryland State Teachers College, Towson
A.B. 1949, Western Maryland College		Flores, Barbara G.
Flannery, Melissa Frances	Va.	Flores, John
Flannery, Robert Louis, Jr.	Md.	Flore, Mark Roy
B.S. in L.B. 1949, Virginia Polytechnic Institute		A.B. 1950, Truett College
Flannery, Thomas Melville	Md.	Florman, Arthur Herman
B.A.E. 1950, Rochester Polytechnic Institute		B.S. 1951, Tulane University
		Floyd, Patricia Ann
		Floyd, Helen Anne
		A.B. in Edu. 1955, The George Washington University

Feldman, Robert Carl	Va.	Fortson, Paula Roberta	Va.
A.B. 1961, 1963, The George Washington University		Forster, Antonia Julia	D.C.
Felt, Frank McRae	D.C.	Forster, Louise Leonard	Va.
A.B. 1961, Brown University		B.S., A.B. 1960, Southwestern State College	
Felt, Kathryn Phoebe	Md.	Foster, Alan Lewis	Md.
A.B. 1960, The George Washington University		Ph.D. 1963, University of Detroit	
Felt, Joseph Roger	N.Y.	Foster, Barbara Jean	D.C.
A.M.E. 1977, M.S. in C.E. 1982, Virginia Institute of Technology		Foster, Belmont Earle, Jr.	Va.
Felt, Jane Watson		Foster, Daniel Cleveland	Va.
Felt, James Marion	Md.	B.S. 1948, Virginia Union University	
A.B. 1961, Lloyd	N.Y.	Foster, Edwin Stanton	Md.
Felt, Ch. E. 1967, Rose Polytechnic Institute	Ind.	B.S. 1945, University of Illinois	
Felt, Robert Bruce		Foster, Jerry Franklin	Tenn.
Felt, Mary James	Va.	Foster, Mary Louise	Pa.
Felt, James Vincent	Ala.	Foster, Robert Mitchell	Md.
Felt, Lewis Berkeley Chen	D.C.	B.S. 1941, University of Maryland	
B.A. in E.E. 1945, Massachusetts Institute of Technology	Md.	Foster, James Edison	Va.
Felt, William Der		A.B. in Ed. 1965, The George Washington University	
Felt, George Sherman	D.C.	Foster, Gerald Lionel	Mass.
Felt, Patricia Anne	D.C.	Foster, David	D.C.
Felt, Victor Ella	D.C.	Foster, Lisa Beverly	Va.
Felt, Lynn Western Maryland College	D.C.	Foster, William Lee	Kana.
Felt, Robert Richard		Foster, Marguerite Elizabeth	Md.
Felt, James Thomas		Fox, Cyril Lambert	Va.
Felt, Charles	Md.	Fox, Helen	Pa.
Felt, Charles Sidney, Jr.	D.C.	A.B. 1967, A.M. 1969, Ed.D. 1972, The George Washington University	
Felt, The George Washington University	D.C.	Fox, James Harold	Va.
Felt, Mary Ann		B.S. in B.A. 1968, University of Tennessee	
Felt, John O.		L.L.B. 1966, University of Miami	
Felt, James Evans	Va.	Fox, Joanne	N.Y.
A.B. 1961, A.M. 1964, The George Washington University	Md.	A.B. 1945, York University	
Felt, Anna Margaret		Fox, Barbara Deborah	D.C.
Felt, John Wayne, Jr.	Md.	Fox, John LeRoy	Md.
Felt, John Hitzefeld	Md.	Fox, Mary Herbert	D.C.
Felt, John		Fox, Mary Jane	Mass.
Felt, Robert Howard	D.C.	B.S. in P.S. 1966, Georgetown University	
Felt, James	Pa.	Fox, Mable Lee	Va.
Felt, James Robert	Va.	Fox, Richard Leon	Va.
A.B. 1961, M.S. 1961, Kansas State Teachers College		B.S. in M.E. 1967, University of Pittsburgh	
Felt, John Thomas, Jr.		Fox, Susan Jean	Ind.
Felt, University of North Carolina	N.C.	Fox, Sue Anne	N.Y.
Felt, Anna		Fox, William George	Md.
Felt, Susan	Texas	M.E. 1962, Stevens Institute of Technology	
Felt, James Victor		Fox, William Lloyd	Md.
B.A. 1961, M.S. 1964, Syracuse University	Md.	A.B. 1961, A.M. 1965, Western Reserve University	
Felt, James Henry		Fox, William Raymond	Md.
Felt, Anna Louise		B.S. in P.E. 1946, The George Washington University	
Felt, Alan Kenneth	Md.	Fox, Allen Howard	D.C.
B.A. in A.F. 1969, M.S. in A.F. 1970, Georgia Institute of Technology	Va.	A.B. 1961, University of Maryland	
Felt, John Carroll		Fox, John Elizabeth	Va.
Felt, Mar Gustav	Va.	Frazee, Thomas Benjamin	D.C.
B.A. in A and M.E. 1963, Webb Institute of Naval Architecture		A.B. 1965, University of Maryland	
Felt, Robert Herbert	Va.	Frazee, Henry Frank	D.C.
B.A. in P.E. 1960, Illinois Institute of Technology	D.C.	Frazier, James Foster	Va.
Felt, Anna Beulah	Ohio	B.S. 1945, U.S. Military Academy	
A.M. in Ed. 1961, The George Washington University	D.C.	Frazier, Frederick William III	Ohio
Felt, Robert Thomas		A.B. 1964, Princeton University	
Felt, James Thomas	D.C.	L.D. 1967, University of Michigan	
Felt, James Thomas	Ky.	Frazee, David Harold	D.C.
		Frazee, James Manning	Md.
		Frazee, Robert Muller	Va.
		Frazee, Ring M. Frazier	Md.
		A.B. 1969, The George Washington University	

Fraser, Roger James	Va	Fraser, Annie Laura	
B.S. 1952, Lafayette College		Fraser, Jeffrey Paul	
Franchino, John Richard	N Y	Fraser, Suzanne Jane	
Francia, Clifford Dale	Va	Fraser, Howard James, Jr.	
Francia, Evans Jay	Iowa	A.B. 1950, A.M. 1951, Temple University	
B.S. 1950, University of Kansas		Fraser, Robert Chester	
Francia, Francis Bernard	Iowa	A.B. 1955, Boston University	
B.S. 1956, Iowa State College of Agriculture and Mechanic Arts		Fraser, Charles Mason, Jr.	
Frandsen, Carl Perle	D.C.	Frederick, Hubert Cyril	
A.B. 1957, Dartmouth College		Frederick, Irwin Stanley	
Frandsen, Ellen Christine	Va	A.B. 1953, Harvard College	
A.B. 1949, University of Nebraska		Frederick, Lewis	
Frank, Michael	D.C.	B.S. 1944, U.S. Naval Academy	
Law degree 1954, Comenius University, Czechoslovakia		Frederick, William Lambert	
Frank, Arnold Roy	D.C.	B.M.E. 1957, University of Dayton	
A.B. 1956, A.M. 1958, Johns Hopkins University		Frederick, Joan Emma	
Frank, Charles Chapman	N Y	A.B. 1954, University of Maryland	
Frank, Gloria Elaine	Md	Fred, Stephen Edwin	
B.S. 1947, University of Vermont		B.S. in C.E. 1955, University of Nebraska	
Frank, Paul Albert	D.C.	Frederick, James Edward	
Frank, Rose Madeleine	W.	A.B. 1944, A.M. 1952, University of Denver	
Frank, Stephen Elmer	D.C.	Freeman, Aaron Elmer	
B.S. 1955, Memphis State University		A.B. 1951, M.S. 1955, The George Washington University	
Frank, William George	Va	Freeman, Edward James	
B.M.E. 1945, University of Louisville		A.B. 1954, Indiana University	
B.D. 1945, Virginia Theological Seminary		Freeman, Elmer James, Jr.	
Frank, William Foster	D.C.	Freeman, John Franklin	
Frankie, David Monroe	Texas	A.B. 1945, Pennsylvania State University	
Franklin, Abraham	N Y	A.B. 1945, The George Washington University	
B.S. 1945, Brooklyn College		A.M. in Ed. 1955, The George Washington University	
B.M.E. 1941, Cooper Union		Freeman, Joseph H.	
L.L.B. 1945, The George Washington University		A.B. 1945, A.M. 1947, Clark University	
Franklin, Carol Patricia	D.C.	Freeman, Joseph Vincent	
Franklin, Alvin Hawkins	France	A.B. 1945, Pennsylvania College	
Franklin, Daniel T. John	D.C.	Freeman, M. J. Sana	
A.B. 1945, The George Washington University		Freeman, Donald Garrison	
Franklin, Edwin Abbott, Jr.	D.C.	B.S. 1945, Maryland State College	
Franklin, George William	Md	Freeman, Thomas Wayne	
B.S. 1948, D.C. Teachers College		B.S. 1944, Howard College	
A.M.E. 1951, New York University		Freeman, Virginia Lee	
Franklin, Phyllis Taylor	Md	Freeman, William Holman	
Franklin, Robert Orr	Texas	B.S. in C.E. 1955, Virginia Military Institute	
B.S. and E. 1947, Vanderbilt University		Freeman, Laura Belle	
Franklin, William Henderson, Jr.	Va	Freeman, James	
Franklin, William Mark	Pa	B.E.E. 1945, College of the City of New York	
Franklin, Viola	D.C.	Freeman, Ann Barry	
Franklin, Diane		Freeman, James Norman	
A.B. 1944, The George Washington University		A.B. 1950, Duke University	
Franklin, Hui and Eugene	D.C.	Freeman, Anne	
Franklin, Joseph Robert	Va	B.E.E. 1950, Rensselaer Polytechnic Institute	
Franklin, Rosemary Ruth	Md	Freeman, Charles R. deet	
Fraser, Donald Hest	Md	B.S. 1950, University of Alabama	
B.M.E. 1956, The George Washington University		French, David Matthew	
Fraser, Donald Ross	Ohio	French, Jack Phillip	
B.S. 1954, University of Toledo		A.B. 1950, Howard College	
L.L.B. 1956, The George Washington University		French, John P. Jones	
Fraser, Maria Helen	D.C.	B.S. 1954, College of William and Mary	
Fraser, Agnes Ann	D.C.	M.S. 1955, Yale University	
Fraser, Alan R.	Va	French, Vernon Obie	
A.E. in Ed. 1955, Fairmont State College		French, Jack Lee	
Fraser, Elizabeth Jane	Ohio	French, Alan Franklin	
A.B. in Law, 1948, The George Washington University		French, Anne Sigmund	
Fraser, Mildred Wilkins	Va	French, Elizabeth Anna	
		French, John Carl	
		French, Carl Ann	
		French, Gabrielle Hanna	

Students Registered

(671)

1. Martin, George	N.Y.	Fallmer, James Clark	N.J.
2. ... New York University		Fallon, Kenneth Aloysius	Pa.
3. ... Alexander	Va.	Falk, James S.	Va.
4. ... The George		Falk, James Allen	Va.
5. ... University		A.B. 1914, Storer College	
6. ...	D.C.	Fanning, Sandra Schuchman	Kan.
7. ...	D.C.	Farr, Dennis Fleming	La.
8. ...	N.J.	A.B. 1918, Howard University	
9. ...	D.C.	A.M. 1920, New York University	
10. ... Washington University	Md.	Farrington, Robert Lee	Pa.
11. ...		Farrow, Joseph Cassell	Md.
12. ...	Va.	A.B. 1928, University of Maryland	
13. ...	Va.	Farr, Mary Ann Jones	D.C.
14. ...	N.Y.	A.B. 1928, College of New Rochelle	
15. ...	D.C.	Farr, Thomas William	Md.
16. ...		B.S. in E.E. 1927, University of	
17. ...		Arkansas	
18. ...	D.C.	Farrington, William Thomas	Ill.
19. ...		A.B. 1927, University of Chicago	
20. ...	Va.	Farr, Shirley Faye	Va.
21. ...		Farr, Josephine Nemo	N.Y.
22. ...	N.I.	A.B. 1911, Columbia University	
23. ...	Va.	Farr, Lucy Virginia	N.Y.
24. ...	Md.	Farr, Edward John	Va.
25. ...	Md.	A.B. 1921, University of Louisville	
26. ...	Va.	Farrington, David Lee	Md.
27. ...		B.S. 1927, Boston College	
28. ...		B.M. 1929, Harvard University	
29. ...	Del.	Farrington, Marie Rosa	D.C.
30. ...		Farrington, Charles Christopher	Md.
31. ...	D.C.	A.B. 1921, University of Maryland	
32. ...	Va.		
33. ...		G	
34. ...	Va.	Gabre, Andrew John	D.C.
35. ...	Va.	A.B. 1927, The George Washington	
36. ...	Va.	University	
37. ...		Gabson, Paul Lavelle	D.C.
38. ...		Gabson, James Lewis	Va.
39. ...		A.B. 1918, Catholic University of	
40. ...		America	
41. ...	Texas	Gaddy, Arthur Franklin, Jr.	Va.
42. ...	Va.	Gaddy, Susan Elizabeth	Md.
43. ...		Gaddy, James Richard	Md.
44. ...		B.S. 1924, University of Minnesota	
45. ...	D.C.	Gaddy, Marion Hamble	Md.
46. ...	D.C.	B.S. 1924, University of Minnesota	
47. ...		Gage, Emory Allen	Texas
48. ...	Ill.	A.B. 1927, North Texas State College	
49. ...	D.C.	Gagnon, John Alfred	Md.
50. ...		B.S. 1927, Arnold College	
51. ...	Md.	M.S. 1926, The George Washington	
52. ...		University	
53. ...	Md.	Gagliardi, Marjorie Charles	Md.
54. ...		Gage, Walter Montague, Jr.	Va.
55. ...	D.C.	B.S. 1921, Cornell University	
56. ...		Gagliardi, Mary Nell	Va.
57. ...		Gagliardi, John Frank	Va.
58. ...	D.C.	Gaines, Adeline Winthrop	D.C.
59. ...		B.S. 1927, D.C. Teachers College	
60. ...	D.C.	Gaines, Carolyn Julia	D.C.
61. ...		Gaines, Emily Margaret	N.Y.
62. ...	Md.	Gaines, John Eugene	R.I.
63. ...	Va.	Gaines, Phyllis Barrett	Va.
64. ...	Md.	Gaston, H. Russell III	Calif.
65. ...	P.L.	A.B. 1927, A.M. 1928, University of	
66. ...	Va.	California	
67. ...	Md.	Gastner, Robert Frank	Md.
68. ...		Gastner, Eugene Anthony	N.Y.
69. ...		B.E.A. 1921, St. Bonaventure University	
70. ...		Gale, Edwin Joseph	D.C.
71. ...	Pa.	A.B. 1927, Catholic University of	
72. ...		America	

Galiani, Alfred John	Va.	Gardella, Mary Catherine	Mo.
Galisky, Albert Joseph	Calif.	A.B. 1946, Emmanuel College	
Gall, Robert Michael	D.C.	A.M. 1951, Catholic University of	
Gallagher, Ellen Anne	Va.	America	
Gallagher, Elmo Anthony	Va.	Gardner, Allen Stiles	Mo.
B.S. in E.E. 1957, Christian Brothers		B.S. 1956, College of William and Mary	
College		Gardner, Arthur William	Mo.
Gallagher, Joan Patricia	D.C.	Gardner, Betty Marie	Mo.
Gardner, John Donald	D.C.	B.S. 1954, Maryland State Teachers	
B.S. in E.E. 1925, Northwestern		College	
University		Gardner, Donald Alan	
Gallagher, John Edward	Va.	B.S. in B.A. 1957, University of	
Gallagher, Michael Graham	Va.	Maryland	
Gallagher, Peter Anthony	D.C.	Gardner, Doris Julianne	
Gallagher, William Michael	D.C.	A.B. 1957, University of Rochester	
A.B. C.G.S. 1958, The George		Gardner, Katherine Ann	
Washington University		Gardner, Lawrence Frederick	
Gallant, John Joseph	Va.	A.B. 1957, Dartmouth College	
Gallant, Milton	N.J.	Gardner, Phyllis Allen	
Gallant, Susan Doris	N.J.	B.S. 1957, Tufts University	
B.S. in H.E. 1958, The George		Gardner, Thomas Lindeberg	
Washington University		B.S. 1956, Minnesota State College	
Gallegos, Patricia Ann	N.Y.	Gardner, Walter Lewis	
Galles, Thomas Edward	Va.	Gardner, Thomas Martin	
B.S. in E.E. 1950, Marquette University		Gardner, Walter Jerome	
Galen, William Arthur, Jr.	Va.	Garnes, James Leon	
Galloway, Barbara Jo	N.Y.	B.S. 1956, M.S. 1954, The George	
Galloway, Lucien	D.C.	Washington University	
B.S. 1957, Berea College		Garland, Jo Ann	
Galloway, Susan Cooper	D.C.	Garland, Naomi Mary	
Gair, Richard Frank	Mo.	A.B. 1943, Christian College	
Galotta, Victoria Ann	Mo.	A.M. 1954, University of North Carolina	
Galvin, Merle Nan	D.C.	Garland, Thomas William	
Gambrell, John Vance	D.C.	Garland, Ray Jerome	
A.B. 1948, Howard University		A.B. 1957, Johns Hopkins University	
Gannon, Robert Irving	D.C.	Garnes, Esther Cor	
Garcia-Guzman, Miguel Angel	Puerto Rico	B.S. 1951, Howard University	
B.E.A. 1950, University of Puerto Rico		Garnes, Howard Clement, Jr.	
M.B.A. 1953, University of Pennsylvania		B.S. 1956, Clemson College	
Garcia, Dana Mae	Va.	Garnes, James Dale	
Garcia, Florence Rabinowitz	Mo.	A.B. in Geol. 1951, The George	
Garcia, Robert Allen	Mo.	Washington University	
A.B. 1958, Rutgers University		Garnes, James Freda	
Garcia, Mary Elizabeth	Mo.	Garnes, Suzanne S. T.	
Garcia, Meri Clelia	Va.	Garnes, Daniel Milton	
Garcia, Anne Nannon		A.B. 1953, Howard University	
A.B. 1954, Indiana University		Garonsky, Katie Beryl	
Garcia, Frank Elmer, Jr.	D.C.	Garretson, William Wendell	
Garcia, Geraldine Seale	Mo.	A.B. 1950, Iowa Wesleyan College	
A.B. 1955, Yabton College		Garrett, David Lowell	
A.M. in Ed. 1951, The George		B.S. 1952, Union City of Maryland	
Washington University		Garrett, Lewis Frederick	
Gantz, Sally Joelle	D.C.	A.B. 1955, Col. College	
Ganz, Joel S.	N.Y.	Garnett, Marie Cecelia	
B.S. 1957, Bethany College		A.B. 1955, Hunter College	
Garafola, Joseph Ralph	Va.	Garnett, Paul Westbury	
B.S. 1940, University of California		A.B. 1956, L.L.B. 1956, The George	
Gardner, Marie Macaulay	Mo.	Washington University	
A.B. 1945, University of Wisconsin		Garrett, W. Barry	
Gardner, Melvin Carl	Ill.	A.B. 1956, A.M. 1957, Baylor University	
B.S. 1948, Purdue University		Garrett, William Donaldson	
Gardner, Lee Harrison	Mo.	B.S. 1954, The George Washington	
B.S. in E.E. 1954, Pennsylvania State		University	
University		Garrison, John M. Henry	
Gardner, Evangeline Latell	D.C.	Garrison, Lynn Wend	
Gardner, Joseph George	D.C.	Garrison, Maxwell Louise	
Gardner, Mervyn L.	U.C.	Garrison, Susan	
Gardner, Raymond	Mo.	B.S. 1957, College of William and Mary	
A.B. in Geol. 1958, The George		Garrison, Dennis Gene	
Washington University		Garrison, Wanda Abelle	
Gardner, Ronnie Eugene	D.C.	Garrison, Charles R. Jand	
Gardner, Roque Alberto	D.C.	Garrison, Luth	

Students Registered

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Carl Paul			
1917, Northwestern University	Ill	Geerhart, Constance Vivienne	D.C.
M.A. 1949, Columbia University		A.B. 1942, Cornell University	
Norma Wilson		A.M. in Ed. 1944, The George	
E. 1950, Maryland State Teachers	Md.	Washington University	
College, Bowie		Geerke, John Henry	D.C.
John Duncan		Geisinger, Edward Charles	D.C.
1950, Georgetown University	D.C.	A.B. 1937, The George Washington	
E. 1951, Northern State	Va.	University	
College		Geisinger, Thelma Ann	D.C.
A.B. 1940, Howard University	Pa.	Geisler, George Dean	Md.
E. 1941, Henry Goss		Geissel, Margaret E.	D.C.
E. 1942, M.E. 1947, Massachusetts	Md.	Geiss, Clara	D.C.
Institute of Technology		R.S. in Ed. 1941, Boston Teachers College	
Agnes Morris		Geiss, Ellen	Md.
Edw. and Charles	D.C.	Geiss, Herbert George	Wa.
Edw. and Charles	Kans.	Geiss, Ronald August	D.C.
Edw. and Charles	Va.	Geiss, Herbert	D.C.
Edw. and Charles	Calif.	A.B. 1939, University of South Dakota	
Edw. and Charles	Md.	Geiss, Larry Lee	Kans.
Edw. and Charles	Wash.	Geiss, Everett John	D.C.
Edw. and Charles	D.C.	Geiss, Paul	Va.
Edw. and Charles	D.C.	A.B. 1940, 1948, A.M. in Govt. 1949,	
Edw. and Charles	D.C.	The George Washington University	
Edw. and Charles	D.C.	Geiss, Norman Howard	Conn.
Edw. and Charles	D.C.	Geiss, Patricia Davis	Calif.
Edw. and Charles	D.C.	Geiss, Sally Faye	Va.
Edw. and Charles	D.C.	Geiss, Emma Leonard	Pa.
Edw. and Charles	D.C.	Geiss, Henry Ralph	Conn.
Edw. and Charles	D.C.	Geiss, Walter Andrew	Md.
Edw. and Charles	D.C.	A.B. 1931, A.M. 1932, The George	
Edw. and Charles	D.C.	Washington University	
Edw. and Charles	D.C.	Geissman, William Edwin Davis, Jr.	Md.
Edw. and Charles	D.C.	Geissman, N. Julia Clara	D.C.
Edw. and Charles	D.C.	A.B. in Govt. 1946, The George	
Edw. and Charles	D.C.	Washington University	
Edw. and Charles	D.C.	Geiss, Edmund Alex	Va.
Edw. and Charles	D.C.	R.S. 1941, Stephen F. Austin State	
Edw. and Charles	D.C.	College	
Edw. and Charles	D.C.	Geiss, Helen Olive	Va.
Edw. and Charles	D.C.	Geiss, James	Md.
Edw. and Charles	D.C.	R.S. 1941, Massachusetts Institute of	
Edw. and Charles	D.C.	Technology	
Edw. and Charles	D.C.	Geiss, James David	D.C.
Edw. and Charles	D.C.	Geiss, James Francis	Md.
Edw. and Charles	D.C.	R.S. in Ed. 1941, University of Illinois	
Edw. and Charles	D.C.	Geiss, Lyndale Hampton	Md.
Edw. and Charles	D.C.	R.S. in Ed. 1941, A.M. in Ed. 1942,	
Edw. and Charles	D.C.	The George Washington University	
Edw. and Charles	D.C.	Geiss, Mary	Md.
Edw. and Charles	D.C.	A.B. 1941, University of Maryland	
Edw. and Charles	D.C.	Geiss, Nancy Mable	Va.
Edw. and Charles	D.C.	Geissman, Adam James	D.C.
Edw. and Charles	D.C.	Geissman, Emma E. George	D.C.
Edw. and Charles	D.C.	A.B. in Ed. 1941, The George	
Edw. and Charles	D.C.	Washington University	
Edw. and Charles	D.C.	Geissner, James Alan	Ill.
Edw. and Charles	D.C.	R.S. in Ed. 1941, Northwestern	
Edw. and Charles	D.C.	University	
Edw. and Charles	D.C.	Geissner, Benjamin Valentino	D.C.
Edw. and Charles	D.C.	Geissler, Nicholas	D.C.
Edw. and Charles	D.C.	Geissler, Linda Ann	D.C.
Edw. and Charles	D.C.	Geissler, Robert Howard	Md.
Edw. and Charles	D.C.	Geissler, Robert Adams	Va.
Edw. and Charles	D.C.	Geissler, Mary Frances	Md.
Edw. and Charles	D.C.	Geissler, Henry Samuel	Md.
Edw. and Charles	D.C.	R.S. 1941, The Citadel	
Edw. and Charles	D.C.	Geissler, Flora Kenneth	Va.
Edw. and Charles	D.C.	Geissler, Francis George, Jr.	Va.
Edw. and Charles	D.C.	R.S. in Ed. 1941, Virginia Polytechnic	
Edw. and Charles	D.C.	Institute	
Edw. and Charles	D.C.	Geissler, Mary	Md.
Edw. and Charles	D.C.	R.S. 1941, College of the City of	
Edw. and Charles	D.C.	New York	

Gerstenfeld, Roger William	D.C.	Gillespie, Richard Frank	N.C.
Gert, Gerard Martin	Calif.	Gillespie, Robert Ann	Va.
B.S. 1942, New York University		Gillette, Galen Gerald	Maine
Geschickter, Charles Freeman, Jr.	Va.	B.S. 1958, University of South Dakota	
A.B. 1955, Wesleyan University		Gilley, Leonard Brasen	Va.
Gessland, Susan Shelton	Md.	A.B. 1951, Bowdoin College	Va.
Gessner, Myron Stanley	W.Va.	Gilliam, Joseph Charles	Va.
Gessner, Rebecca Hillard	Mass.	Gilligan, James Frederick	
Gevertz, Jane Annner	Md.	A.B. 1954, St. Bonaventure College	Ind.
A.B. 1956, Cornell University		Gilligan, John Henry, Jr.	
Ghatan, Diamond Jack	Iran	B.S. 1953, Villanova University	
A.B. 1956, Georgetown University		Gilman, Alexia Annalisa	
Giambrone, George James	D.C.	B.S. 1951, Pacific University	
A.B. 1951, University of South Carolina		Gilman, John Dale	
A.M. 1954, The George Washington		Gilman, Ken Earl	
University		Gilman, Gordon Sterling	
Gibb, Frederick William II	D.C.	Gilman, Nancy Joan	
Gibbs, Beverly Anne	Md.	Gilman, Louise Danner	
Gibbs, DeLamar Johnson	Utah	B.M. 1951, Oklahoma College for	
B.S. 1956, Utah State University of		Women	
Agriculture and Applied Science		Gilman, William Lawrence	
Giberson, Howard Samuel	Va.	Gilman, Barbara Eleanor Sale	
A.B. 1951, Harvard University		Gilman, Bruce Otis	
Gibort, Anne Janet	Va.	Gilman, Christopher Cook	
Gibson, Elise McLean	N.C.	Gilman, James Robert	
A.B. 1959, Ayres Scott College		Gilman, John	
Gibson, James Stuart	Md.	B.B.A. 1955, University of Georgia	
B.S. 1954, University of Maryland		Gilmore, Joseph Patrick	
Gibson, Lamdon	Va.	B.S. 1952, M.S. 1952, St. John's	
Gibson, Murray Washburn	Va.	University	
B.S. 1951, Virginia Polytechnic		Gilman, John Alexander, Jr.	
Institute		Gilman, Lewis Oliver, Jr.	
Gibson, Nina Ford	Va.	B.S. 1953, University of Oklahoma	
Gibson, Vera Audrey	Va.	Gilman, William James	
Gibson, Thomas Joseph	Va.	B.S. 1951, Rockwell College	
B.F.E. 1955, Rensselaer Polytechnic		Gibson, Janet Rose	
Institute		Gibson, Samuel Paul, Jr.	
Gidd, Joseph Marie	D.C.	B.S.E. 1957, U.S. Naval Academy	
Giege, William George	Md.	Gigery, C. Ales	
B.S. 1954, Johns Hopkins University		A.B. 1955, University of California at	
Gifford, William Rennie	Md.	Los Angeles	
B.S. 1951, University of Maryland		LI.P. 1951, University of Southern	
Gignoux, Frederick Evelyn	D.C.	California	
Giles, Charles Huxley	Va.	LI.M. 1951, Georgetown University	
B.E.S. 1958, Johns Hopkins University		Gina, John Allen	
Giles, Margaret Rosick	Va.	B.S. 1951, University of Maryland	
A.B. 1958, The George Washington		Ginsburg, Jacob	
University		Ginsburg, Martin Van	
Gilbert, Mona J.	Md.	A.B. 1951, Loyola University	
A.B. 1957, Arizona State College		Ginsburg, Ronald Arnold	
Gilbert, Orlan Cary, Jr.	Va.	Ginsburg, Ruth Paul	
Gilbert, Nancy Virginia	D.C.	B.S. 1957, University of Kansas	
Gilbert, Ray Lon	Pa.	Gins, Vincent Gerald	
Gill, Bernard S.		Met Eng. 1956, Colorado School of	
B.B.A. 1957, University of Pittsburgh	D.C.	Mines	
Ginsburg, Herbert Joseph		Giordano, Frank Michael	
A.B. 1956, The George Washington		Giordano, Andrew Manuel	
University		A.B. 1958, University of California	
Giles, Janet Claire	Md.	Ginsburg, Robert Augustus	
Ginsburg, James McCracken, Jr.	Va.	B.S. 1954, Georgetown	
Ginsburg, Edward York	Va.	University	
Gins, Paul William	D.C.	Ginsburg, Mary Elizabeth	
B.S. 1955, Colwell College		Ginsburg, Rose Carmela	
Gins, John Vincent	N.Y.	Gins, Lisa Douglas	
Gins, John Francis		A.B. 1956, Dillard University	
Gins, William	Ark.	Ginsburg, James Wilson, Jr.	
P.E. 1951, Fordham University		Ginsburg, Judith Ann	
Gins, Milton Sherman		Ginsburg, Susan Hester	
B.S. 1956, Arkansas Agricultural and		Ginsburg, Susan Hester	
Medical College		Ginsburg, Louise Shirleyford	
Gins, Patricia Dee	Va.	A.B. 1954, Howard University	
Ginspie, Donald Edward	Va.	A.M. 1959, New York University	
B.S. 1955, Virginia Military Institute			

Students Registered

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Goff, Darrow			
A.B. 1929, University of Maryland	Md	Goff, Charles Clifford	Va
Goff, Michael Lurice		A.B. 1929, West Virginia University	
Goff, Robert John	D.C.	Goggin, Anne Eleanor	D.C.
B.S. M.F. 1932, Yale University	Md	B.S. 1932, Georgetown University	
Goff, Walter			
A.M. 1927, Rutgers University	D.C.	Gohr, Joseph James	Va
A.B. 1927, Connecticut University		Gohr, Thomas John	D.C.
Goff, Gerald John		Gohr, Benjamin Arthur	D.C.
A.B. 1928, The George Washington University	Md	Gohr, Roy Roschelle	Md
Goff, Leonard Herbert		A.B. 1928, The George Washington University	
E.S. 1928, Franklin and Marshall College	N.J.	Gohr, Lewis	Md
Goff, Marvin		Gohr, Sanford Leonard	D.C.
A.B. 1928, Bowdoin College	N.Y.	A.B. 1927, University of Rochester	
Goff, Louis Francis, Jr.		Goldsberg, Aaron	N.Y.
A.B. 1927, Reed College	Mass	A.B. 1928, Bowdoin College	
Goff, George William		M.S. 1924, DePaul University	
B.A. 1928, Boston University	Mass	Goldsberg, Benjamin	D.C.
Goff, David Lewis		Goldsberg, David Michael	D.C.
Goff, Sam Henry	Md	Goldsberg, Gerald Harry	Conn.
A.B. 1928, Yale University	D.C.	A.B. 1928, University of Connecticut	
Goff, Robert Emerson		Goldsberg, Gerald Eva	D.C.
A.B. 1927, Georgetown University		Goldsberg, Lloyd Nolta	Pa.
Goff, Frank Joseph	N.J.	Goldsberg, Russell Sanford	Md
A.B. 1927, Princeton College	D.C.	B.S. 1928, University of Maryland	
A.M. 1927, Catholic University of America	D.C.	Goldsberg, Stanley	D.C.
Goff, Harry Hunt		Goldsberg, Louise Ferrar	N.Y.
Goff, Joseph Emily		Goldsberg, Joseph Carroll	Iowa
Goff, Joseph Lodge	Md	B.S. 1924, Tennessee Polytechnic Institute	
A.B. 1928, The George Washington University	Va	H.B. 1928, University of Tennessee	
Goff, Wallace		M.B.A. 1924, The George Washington University	
A.B. 1928, State University of Iowa	Iowa	Golden, Father Lee Thomas	Tenn.
Goff, Paul Edward	D.C.	Goldschmidt, Jonathan Albert	Md
A.B. 1928, U.S. Naval Academy	Calif.	Goldschmidt, Evelyn Ann	D.C.
Goff, Charles		Goldschmidt, Fred Burton	D.C.
A.B. 1924, A.M. 1927, Yale	D.C.	Goldschmidt, Eva	Md
Goff, Charles		Goldschmidt, James LaRue	Md
Goff, Charles		Goldschmidt, Leonard Thomas	D.C.
Goff, Charles		Goldschmidt, Alice Wilbur	Iowa
Goff, Charles		A.B. 1924, Syracuse University	
Goff, Charles		Goldschmidt, George Ray	Mo.
Goff, Charles		B.S. 1924, D.C. Teachers College	
Goff, Charles		A.M. 1927, The George Washington University	
Goff, Charles		Goldschmidt, Margaret Tamm	Mo.
Goff, Charles		B.S. 1927, Columbia University	
Goff, Charles		M.S. 1924, Phi Psi 1924, University of Maryland	
Goff, Charles		Goldschmidt, George Victor	Md
Goff, Charles		B.S. 1927, D.C. Teachers College	
Goff, Charles		Goldschmidt, Mary Anne	D.C.
Goff, Charles		Goldschmidt, Fred Eugene	D.C.
Goff, Charles		Goldschmidt, Frances Della	Md
Goff, Charles		Goldschmidt, Charles Lee	Va
Goff, Charles		Goldschmidt, James Edward	D.C.
Goff, Charles		Goldschmidt, Joseph Lee	Calif.
Goff, Charles		A.B. 1927, University of California	
Goff, Charles		B.S. 1927, University of California	
Goff, Charles		Goldschmidt, Joseph	Md
Goff, Charles		B.S. 1928, University of Illinois	
Goff, Charles		Goldschmidt, Martin Norman	D.C.
Goff, Charles		A.B. 1927, University of Maryland	
Goff, Charles		Goldschmidt, Bradley Maynard	Md
Goff, Charles		A.B. 1928, College of William and Mary	Va
Goff, Charles		A.M. 1924, University of Virginia	
Goff, Charles		Goff, William Ray	D.C.
Goff, Charles		Goff, Joseph Francis	Va

Golladay, Mary Jean
B.S. 1951, North Carolina State
Teachers College, Elizabeth City

Golitz, Alfred Rudolf
B.S. & C.P. 1911, C.E. 1940,
University of Pennsylvania

Gomez, Stella
Gomez, Anasta, Hector Anacieto
Gonzalez, Sol
Gordon, Bernard
B.S. 1956, Yale University
Gonzales, Gerald Anthony
Gonzalez, Pedro Adolfo
B.S. 1951, The Citadel
Gonzalez, Telesia
Good, Betty Ann
A.B. 1944, University of Florida
Good, Charles Adrien, Jr.
B.S. 1951, John Carroll University
Good, Dean Kemple
A.B. (C.G.S.) 1957, The George
Washington University
Good, Edgar Clifton, Jr.
Good, George Martin
A.B. 1951, Emory University
Goodall, David Lee
Goodall, Jane McVey
Goodrich, Phyllis Staples
A.B. 1951, Wellesley College
Goodie, Martha Ann
Goodrich, Thomas Wallace
Goodson, James Harold
B.S. 1946, Georgia State College
M.S. 1947, University of Minnesota
Ph.D. 1951, Ohio State University
Goodman, John Conner
B.E.E. 1956, Marquette University
Goodman, Lucet Morton
A.B. 1958, The George Washington
University
Goodman, Philip
B.S. 1956, Union College
Goodman, Stanley Irvine
B.E.E. 1951, Rensselaer Polytechnic
Institute
Goodman, Richard Carlyle
Goodman, David Lawrence
A.B. 1956, Adelphi College
Goodman, John Paul
Goodman, Patricia Schuyler
A.B. 1956, Sonoma Hall College
Goodie, Percy Edward
A.B. 1954, University of Maryland
Goodman, James Bryan
Goodman, Rod Fabian
B.S. & A.E. 1948, University of
Washington
Goodie, Amy Allison
B.S. 1951, M.S. 1954, University
of Alabama
Goodman, Arlene Lane
Goodman, Charles Chambers
B.A. 1947, Northwestern University
Goodman, Clifford Mark
B.S. 1957, Babson College
A.M. 1954, Western University
Goodman, Elton James
Goodman, Gerald
B.S. 1941, College of the City of
New York
A.M. 1957, Columbia University

D.C. Gordon, Gerald Francis
A.B. 1958, Minnesota State Teachers
College, Mankato

Md. Gordon, Harold
Gordon, Harry Carl
B.S. 1957, The George Washington
University

Va. Gordon, Harvey Jack
B.A. 1952, College of the City of
New York

Va. M.P.A. 1956, Harvard University

D.C. Gordon, Hugh Lee
B.S. in E.E. 1958, University of
Maryland

Md. Gordon, Marvin Norman
Gordon, Milton
A.B. 1950, University of California
at Los Angeles

Md. M.S. 1955, The George Washington
University

Pa. Gordon, Ronald Stuart
Gordon, Stephen Frank
Gordon, William Bernard
Gordon, Arthur Eugene
Gordon, Donald John
Gordley, Barbara North
Gordon, John Lowell
Gordon, Peter Ellsworth
B.S. in M.E. 1956, Northwestern
University

Va. Gordon, David Foote
A.B. 1954, Pennsylvania College

D.C. Gordon, Florence F.
Ph.D. 1959, University of Chicago
Gordon, Joseph
Goss, Louis Paul, Jr.
B.S. 1956, Ph.D. 1960, Boston
University

Wia. Goss, Melvin Lee
B.S. & Ph.D. 1950, Purdue University

N.Y. Goss, John Mason
Goss, Louis H.
Goss, Gloria Ann
Goss, Richard John
Goss, Edmund Constantine
B.S. 1955, University of Maryland

Md. Gough, Gerald Francis
A.B. 1956, University of Maryland

N.Y. Gould, Barry Kenneth
Gould, Gloria Jeanette
A.B. A.M. 1950, New York State
College for Teachers, Albany

D.C. Gould, George
Gould, Robert Lewis
Gould, Eugene Eugene Leon
Gosbowski, Alice Jane
Grace, Alice Louise
Grace, William Preston, Jr.
A.B. 1957, Western Maryland College

Va. Grace, David Clark
Grace, Vera
Grace, Lydia Anna
Grace, Philip Arthur
A.B. 1957, The George Washington
University

D.C. Grace, George
A.E. 1955, Thomas Jefferson University
Grace, Francis Vincent
Grace, George
R.F.A. 1957, University of Nebraska
Grace, George
A.B. 1955, Howard University
Grace, Geraldine Agnes

Students Registered

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Gray, James Keith	Va	Gray, Charles Maurice	Hawaii
Gray, John Coven	Md	B.S. 1933, U. S. Naval Academy	
Gray, Pennsylvania State		Gray, Chester Harold	D.C.
Gray, John Goodwin	Va	Gray, Thomas Charles	Md
Gray, University of Virginia		Gray, Paula Madison	D.C.
Gray, Raymond Gary	Va	Gray, Gerald Clyde	Conn.
Gray, Cover of the Holy Cross		A.B. 1938, University of California	
Gray, Robert Martin	Wash.	Gray, Joyce Russell	Va
Gray, William W. Jr.	Va	A.B. 1939, East Carolina College	
Gray, L.D.S. 1956, University		Gray, Leo - Ingle	D.C.
Gray, Michael Joseph II	D.C.	Gray, Maurice Mottell	N.C.
Gray, Linton Bernard	Nehr	Gray, Paula Marshall	Md.
Gray, University of Omaha		B.S. 1948, Virginia Polytechnic	
Gray, John Albert	N.Y.	Institute	
Gray, University of Helsinki		Gray, Ralph Richard	Utah
Gray, Abraham	Md	A.B. 1934, University of Utah	
Gray, Catholic University of		Gray, Rex Catharine	W.Va.
Gray, Franklin	Md	A.B. 1931, Salina College	
Gray, University of Vermont		A.M. 1941, West Virginia University	
Gray, Stanley Aired	D.C.	Gray, Robert Ohio	D.C.
Gray, D.C. Teachers College		Gray, Thomas Lambeth	D.C.
Gray, Paul	N.Y.	Gray, Walter Kelly	Mass.
Gray, Paul	D.C.	B.B.A. 1932, University of	
Gray, University of Massachusetts		Massachusetts	
Gray, Boston University	N.C.	Gravins, Nancy Louise	D.C.
Gray, Ledy	Calif.	Green, Adeline Ann	D.C.
Gray, Ave	Md	Green, Arthur William	Md.
Gray, The George Washington		Green, Catherine Belle	Wash.
Gray, Helen	Va	Green, Donald	Pa.
Gray, University of	N.Y.	B.S. 1914, Maryland College	
Gray, Columbia University		Green, Dorothy Imogene	D.C.
Gray, Alexander Jr.		B.S. 1938, Potomac P. Smith College	
Gray, Harriet, Annes	Va	Green, Edward Thomas	Pa.
Gray, Loring University	Va	Green, Howard Robert	Va
Gray, David Robert	D.C.	B.M.E. 1946, College of the City of	
Gray, University of		New York	
Gray, William John	D.C.	Green, James Laffrey	N.J.
Gray, University of Missouri		B.S. 1928, U. S. Military Academy	
Gray, Walter Ross, and	Va	B.S. in C.E. 1932, University of	
Gray, M.L. and A.E. 1911, New		California	
Gray, William	Md	Green, John Edward	Md
Gray, William, Jellars	Fla	B.S. 1931, Maryland State Teachers	
Gray, University of		College, Frederick	
Gray, University of	N.Y.	Green, Henry O.	La.
Gray, University of		A.B. 1938, Louisiana State University	
Gray, University of	Va	Green, Paul and Robert	Va
Gray, University of		B.M.E. 1946, College of the City of	
Gray, University of	Md	New York	
Gray, University of	Fla	Green, Milton Fitch	Va
Gray, University of	N.Y.	Green, Milton Lorne	Md
Gray, University of		A.B. 1936, University of Pittsburgh	
Gray, University of	Va	Green, Maurice William	Md
Gray, University of		B.S. in C.E. 1931, University of	
Gray, University of	D.C.	Maryland	
Gray, University of		Green, Robert Patrick	Md
Gray, University of	Va	Green, William Clark	Va
Gray, University of		Greenberg, David Leonard	Md
Gray, University of	D.C.	B.E. 1937, The George Washington	
Gray, University of		University	
Gray, University of	Va	Greenberg, Gloria	Md
Gray, University of		A.B. 1937, Brooklyn College	
Gray, University of	Md	Greenberg, Felix Haim	D.C.
Gray, University of		A.B. 1934, Sarah Lawrence College	
Gray, University of	Va	B.A.M. 1937, University of Delaware	
Gray, University of		Green, Bruce Allen, Jr.	Va
Gray, University of	D.C.	Green, Evelyn Foster	D.C.
Gray, University of		B.S. 1936, D.C. Teachers College	
Gray, University of	Va	A.M. 1947, Columbia University	
Gray, University of		Green, Frank Wesley, Jr.	D.C.
Gray, University of	Va	Green, Harry	D.C.
Gray, University of	N.Y.	B.S. 1934, Howard University	
Gray, University of		Green, John T. Quinn	Mass.
Gray, University of		A.B. 1934, American University	

Greene, James Whitehead	Va	Griffin, Charles Narey, Jr.	Pa
Greene, Leonard Lee	Va	Griffin, David Wayne	Pa
Greene, Mary Catherine	D.C.	A.B. 1956, Catawba College	
Greene, Roosevelt Browne	D.C.	Griffin, June King	
A.B. 1948, The George Washington University		B.S. 1945, Tennessee Agricultural and Industrial State University	
Greenhouse, Leon	Md	A.M. 1948, Fisk University	
B.S. in E.E. 1958, University of Maryland		Griffin, London Larkin	
Greenhouse, Samuel W.	Md	B.F.E. 1954, The George Washington University	
B.S. 1958, College of the City of New York		Griffin, Robert Julian	
A.M. 1954, The George Washington University		Griffin, Anne Page	
Greenlee, Lancelyn Peters	Va	Griffin, Charles Herman, Jr.	
Greenslade, John Francis	D.C.	Griffin, Charles Marion, Jr.	
B.S. 1956, U. S. Naval Academy		Griffin, Charles M. of the South	
Greenstein, Burton	Va	A.B. 1954, University of the South	
B.S. in E.E. 1957, University of Miami		Griffin, Charles Russell	
Greenstein, Maurice William	Md	Griffin, Elizabeth Bowen	
B.S. 1948, Providence College		Griffin, Mildred L. 1957	
M.S. 1950, Brown University	N.J.	B.S. 1955, Gower City College	
Greenstein, Robert Edward	N.Y.	A.M. 1945, Columbia University	
Greenstone, Ronald Martin	Md	Griffin, Robert Edward	
Greenway, Sidney Alfred	Va	B.S. 1947, University of Detroit	
Greenwood, Connie Yvonne	Pa	Griffin, Charles Woodfield	
A.B. 1957, Colby College		Griffin, Harold Wayne	
Greenwood, James Thomas	Va	Griffin, Harriet Eleanor	
B.S. 1954, Pennsylvania State University		Griffin, Maria Teresa	
Goetz, Harry Holt, Jr.	Va	Griffin, Emma Adair	
B.S. 1954, U. S. Naval Academy		A.B. 1955, Washburn College	
A.M. 1954, The George Washington University		Griffin, Margaret Adele	
Greet, Mildred Coleman	D.C.	Griffin, Alfred Lawrence	
Greer, William Randolph	D.C.	A.B. 1945, A.M. 1947, Rutgers University	
B.S. in Ed. 1954, A.B. 1955, Morris Harvey College		Griffin, H. A. 1947, Martin	
Greffet, Boris E. Kilpatrick	Va	A.B. 1957, Boston University	
A.B. 1943, Texas Western College		M.S. in P.H. 1953, Columbia University	
Greger, Gwendolyn Friess	Md	M.S. 1958, The George Washington University	
Gregerman, Richard Overlie	S.D.	Griffin, Anne Marguerite	
B.S. 1957, Augustana College		Griffin, Beverly Ann	
Georg, Thomas Lloyd	Calif.	Griffin, Clay Lyle	
A.B. 1957, Stanford University		B.S. 1946, Mississippi College	
Georgine, Jean	Canada	M.S. 1957, Vanderbilt University	
A.B. 1954, Laval University		Griffin, David Preston	
A.M. 1956, University of Manitoba		Griffin, Harry Coleman, Jr.	
Gregory, Frank Arthur	Ont.	A.B. 1952, University of Cincinnati	
Gregory, James Peter	Conn.	Griffin, Raymond Manning, Jr.	
A.B. 1956, Brown University		B.S. 1954, Medical College of Virginia	
Gregory, John	D.C.	Griffin, Lee A. 1955	
Gregory, John B.	Md	Griffin, Lewis Leonidas	
B.F.E. 1954, Stevens Institute of Technology		A.B. in Geol. 1956, The George Washington University	
Grethman, Avraham	D.C.	Griffin, John Robert	
Greiff, Marie	D.C.	B.S. in P.E. 1950, A.M. in Ed. 1951, The George Washington University	
Greiner, Thomas Hamilton	Ohio	Griffin, Barry Martin	
A.B. 1957, Williams College		Griffin, Charles William	
Greiner, Hamilton J.	D.C.	B.S. 1957, Haverford College	
B.A. in 1954, Howard University		Griffin, Thomas William	
Greiner, Marvin A. 1957	Va	B.S. in E.E. 1955, Duke University	
Greiner, William Edward, Jr.	D.C.	Griffin, Michael Roger	
Greiner, Frances de Anna	D.C.	Griffin, Theodore	
Greiner, Jack Russell	Va	A.B. 1951, The George Washington University	
Greiner, William T. 1957	Md	Griffin, Arnold Muel	
Greiner, Alan Browne	Va	A.B. 1954, Rice Institute	
Griffin, Benjamin Franklin	Pa	A.M. 1957, Johns Hopkins University	
B.F.E. 1957, University of Virginia		Griffin, Gerald Henry	
Griffin, Benjamin Wyndle		B.S. 1958, University of South Dakota	
A.B. 1957, University of Pennsylvania		Griffin, Arnold Texas	
		Griffin, Beverly Brouce	
		Griffin, Edwin New	

Students Registered

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[illegible]

Haas, Andrew Frederick
Haas, Franklin Milton
Haase, Herta
Hawer, Richard Bruce
B.S. 1942, Pennsylvania State
Teachers College, Millersville
Hadian, Louis Albert
Haddad, Barbara Jean
B.S. 1955, University of Miami
Haddad, John Kenneth
A.B. 1951, Cornell University
M.S. 1955, University of North
Carolina
Haddad, Richard Michael
A.B. 1955, Wayne University
Haddad, Earl Blaine
B.S. 1950, West Virginia University
Hadi, Abdul
Hadi, Parviz
Hadies, Herschel Nixon
A.B. 1949, Wheatman College
Hadies, Vera Valerie
Hamel, Sabina Mary
A.B. 1955, University of California
at Los Angeles
Hamer, William Henry, Jr.
B.B.A. 1944, Indiana University
Harr, Roger L.
B.S. in M.E. 1958, Ohio University
Hart, Stanley Herbert
Hart, Thomas William
Hartner, Richard William
Hartner, Nancy Helen
Hartner, Patricia Sheila
Hartner, Robert Earl
Harten, Harold Morris
A.B. 1956, St. Olaf College
Hartson, John Holbe
A.B. 1956, St. Olaf College
Hartson, Kathleen Helen
Hartson, Norland Knutger
Hartsock, Raymond Forest
A.B. 1957, Syracuse University
Hartson, R. G. Eugene
B.S. in B.A. 1940, Nebraska
Weberian University
Hawes, Thomas
Hawes, Ronald D.
A.B. 1954, The George Washington
University
Hawes, Stephen
B.S. 1956, Bethany College
Hawley, Ray Russell
A.B. 1957, Marshall College
Hays, Harold
B.S. in E.E. 1955, Kansas State
College of Agriculture and Applied
Science
Hays, Gloria Mildred
A.B. 1950, Randolph-Macon
Women's College
Hays, Young
B.S. 1950, Fisk Woman's University
Hayes, Louis Pascal
Hayes, Bruce
Hayes, Jack Parker
A.B. 1956, Mount Holyoke College
Hayes, Johnathan Augustin, Jr.
Hayes, Milton Knight
Hayes, Maryann Kirshin
B.S. in E.E. 1950, A.M. in Ed. 1953,
The George Washington University

D.C. Halasi, Geza
Va. Architect Diploma 1945, Polytechnic
Va. University, Hungary
Md. Hale, Robert Jack
Hales, Neil Bruce
B.S. 1955, Connecticut University
Haley, Richard Thomas
B.S. 1954, Northeastern University
Halepp, Phyllis Elaine
Hall, Ada Fay
Hall, Bernice Jean
Hall, Blane Parks
A.B. 1951, University of Maryland
Hall, Brian Lionel
A.B. 1957, University of Nevada
Hall, Carolyn Pryde
Hall, Charles Llewellyn
A.B. in Chem. 1955, The George
Washington University
Hall, Charles Stanley
A.B. 1950, M. Keadree College
Hall, David Allen
Hall, Emory Eugene
B.S. 1954, Ball State College
Hall, Frances Susan
Hall, Harold Eugene
Hall, Henry Louis, Jr.
A.B. 1951, University of
Massachusetts
Hall, Jack Herbert
B.S. in E.E. 1957, Rensselaer Polytechnic
Institute
Hall, Jack William
B.S. 1954, University of Maryland
Hall, Jacques Marie
Hall, James Edward
Hall, James Montack
B.B.A. 1954, Wake Forest College
Hall, John Randolph III
Hall, Joseph Charles
Hall, Katherine Ernest
A.B. 1955, Reed College
Hall, Linnie Franklin
A.B. 1956, Duquesne University
Hall, Orlan Robinson
Hall, Perry
B.S. 1942, U. S. Naval Academy
Hall, Sandra Elinor
Hall, Stanley Robert
Hall, Sylvester Raymond
Hall, Vincent Raymond
A.B. 1957, A.M. 1959, Howard
University
Hall, Thomas Winfield
Hall, Thomas Bruce
Hall, William Owen
Hallberg, Frederick Carl
Halliday, Margaret Ross
B.S. in E.E. 1942, Richard College
Hallman, William Hughes
A.B. 1957, University of Texas
Hall, Joseph
Hall, Mary
A.B. 1956, The George Washington
University
Halper, Jack B. Stanley
B.S. 1956, A.M. 1957, Columbia
University
Halpern, Steven Edwin
A.B. 1952, Temple University

Students Registered

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Students Registered			611
Hall, Esther Faison B.S. 1948, M.S. 1949, Virginia State College	Va.	Hancock, Nell A.B. 1928, The George Washington University	Tenn.
Hall, William Charles, Jr. B.S. 1947, Drexel Institute	N.Y.	Handley, Richard B.S. in C.E. 1941, University of Maryland	Va.
Hall, Thomas Harold B.S. 1947, L.B. 1949, University of Tennessee	Pa.	Handley, Earl Leslie A.B. 1935, University of Colorado	Va.
Hall, Gwendolyn B B.S. 1950, University of Delaware	Tenn.	Handwerk, Mary Anna King Hand, Everett J. A.B. 1941, University of Colorado	D.C. Md.
Hall, Harold Theodore, Jr. B.S. 1947, Drexel Institute	D.C.	Hanes, Richard Wayman B.S. in E.E. 1939, Purdue University	Va.
Hall, Judith Barnett B.S. 1947, Duke University	D.C.	Haney, Jayne Dorothy Haney, Joe David	Neb. D.C.
Hall, Ronald Stanley B.S. 1947, Duke University	Md.	Haney, Leonard Forest B.S. 1948, University of Idaho	D.C. Idaho
Hall, James John B.S. 1947, Georgia Institute of Technology	Md.	Haney, Otto Reed A.B. 1947, University of Missouri	Va.
Hall, Nancy Deal B.S. 1947, University of Wisconsin	D.C.	Hanh, Tran Ngon Hanks, Deborah	Vietnam Md.
Hall, Barbara Allen B.S. 1947, University of Wisconsin	W.Va.	Hanker, Marjorie Therese B.S. in Bus. Ad. 1947, Nazareth College	Md.
Hall, Charles Grant B.S. 1947, Syracuse University	D.C.	Hanks, Stanley L. Mar Hanks, Kenneth Lynn	Utah Va.
Hall, Cyle Henry, Jr. B.S. 1947, Walden College	Md.	Hankin, Louis Elizabeth Hans, William Donald	Va. D.C.
Hall, George Henry B.S. 1947, University of Louisville	S.C.	Hans, William Donald B.S. 1947, D.C. Teachers College	Va.
Hall, Harry Augustus B.S. 1947, University of Louisville	Va.	Hans, William Donald M.S. 1947, The George Washington University	D.C.
Hall, Louise Ann B.S. 1947, University of Louisville	Md.	Haltz, Camille Valentine A.B. 1947, Furman College	Md.
Hall, Marion Elizabeth B.S. 1947, University of Rochester	Okla.	Haltz, Warren Lee A.B. 1947, Washington University	Colo.
Hall, Michael Ann B.S. 1947, University of Rochester	D.C.	Hamm, George Joseph Hamm, John Michael	Md. D.C.
Hall, Robert Joseph B.S. 1947, University of Rochester	D.C.	Hamm, John Michael Hamm, Vera Frances	Va. D.C.
Hall, Robert Joseph B.S. 1947, University of Rochester	Kans.	Hamm, Vera Frances B.S. 1947, Ohio State University	Va.
Hall, Robert Joseph B.S. 1947, University of Rochester	Va.	Hamm, Vera Frances A.M. 1944, Columbia University	D.C.
Hall, Robert Joseph B.S. 1947, University of Rochester	Iowa	Hamm, Vera Frances A.M. 1944, Columbia University	D.C.
Hall, Robert Joseph B.S. 1947, University of Rochester	Va.	Hamm, Vera Frances A.M. 1944, Columbia University	D.C.
Hall, Robert Joseph B.S. 1947, University of Rochester	D.C.	Hamm, Vera Frances A.M. 1944, Columbia University	D.C.
Hall, Robert Joseph B.S. 1947, University of Rochester	D.C.	Hamm, Vera Frances A.M. 1944, Columbia University	N.Y.
Hall, Robert Joseph B.S. 1947, University of Rochester	Fla.	Hamm, Vera Frances A.M. 1944, Columbia University	S.D.
Hall, Robert Joseph B.S. 1947, University of Rochester	Ill.	Hamm, Vera Frances A.M. 1944, Columbia University	Md.
Hall, Robert Joseph B.S. 1947, University of Rochester	Va.	Hamm, Vera Frances A.M. 1944, Columbia University	D.C.
Hall, Robert Joseph B.S. 1947, University of Rochester	Va.	Hamm, Vera Frances A.M. 1944, Columbia University	Md.
Hall, Robert Joseph B.S. 1947, University of Rochester	D.C.	Hamm, Vera Frances A.M. 1944, Columbia University	Md.
Hall, Robert Joseph B.S. 1947, University of Rochester	Va.	Hamm, Vera Frances A.M. 1944, Columbia University	D.C.
Hall, Robert Joseph B.S. 1947, University of Rochester	Va.	Hamm, Vera Frances A.M. 1944, Columbia University	Va.
Hall, Robert Joseph B.S. 1947, University of Rochester	Va.	Hamm, Vera Frances A.M. 1944, Columbia University	Md.
Hall, Robert Joseph B.S. 1947, University of Rochester	R.I.	Hamm, Vera Frances A.M. 1944, Columbia University	Norway
Hall, Robert Joseph B.S. 1947, University of Rochester	Va.	Hamm, Vera Frances A.M. 1944, Columbia University	N.Y.
Hall, Robert Joseph B.S. 1947, University of Rochester	Korea	Hamm, Vera Frances A.M. 1944, Columbia University	N.Y.
Hall, Robert Joseph B.S. 1947, University of Rochester	N.Y.	Hamm, Vera Frances A.M. 1944, Columbia University	N.Y.
Hall, Robert Joseph B.S. 1947, University of Rochester	Wash.	Hamm, Vera Frances A.M. 1944, Columbia University	N.Y.
Hall, Robert Joseph B.S. 1947, University of Rochester	Ky.	Hamm, Vera Frances A.M. 1944, Columbia University	N.Y.

Harbour, Stuart Lee	Va	Harring, William James	Me
B.S. 1947, University of Illinois		B.S. in Ed. 1942, New Jersey State Teachers College, Newark	
Haide, Charles Thomas	Conn	A.M. in Ed. 1951, The George Washington University	Me
Haider, Constance Elizabeth	D.C.	Harrington, Joyce Marie	Va
Haines, Patrick Alan	England	B.S. 1957, Western Maryland College	Va
Haines, Paul Richard	Va	Harrington, Sallie Ann	D.C.
B.S. 1957, Rose Polytechnic Institute of Technology		Harris, Beatrice Jordan	
Hardisty, Lois Virginia	Va	Harris, Carol Mary	
B.S. 1941, University of Maryland		B.S. 1950, West Virginia State College	Va
A.M. in Ed. 1948, The George Washington University		Harris, Charles Marshall	Va
Hardisty, Miss Margaret	D.C.	B.S. 1941, South College	
Hardisty, Mary Roberts	D.C.	Harris, David David	Me
A.B. 1952, Middlebury College		B.S. 1954, U. S. Military Academy	
Hardisty, Robert Louis	D.C.	Harris, David John	W. Va
A.B. 1957, The George Washington University		A.B. 1954, William Jewell College	Va
Hardin, Carolyn Myrick	D.C.	Hart, Donald Lee	
A.B. 1958, The George Washington University		Harris, Frances Marian	D.C.
Harding, Roy Woodrow, Jr.	Va	A.B. in Ed. 1958, The George Washington University	D.C.
Hartman, Barbara	Va	Harris, Howard W.	
Hartman, John Andrew	Va	A.B. 1945, Howard University	
Hartman, John Welsh	D.C.	Harris, J. Louise	
B.S. 1954, University of Maryland		B.S. 1944, Virginia Union College	Va
Hartman, Yvonne Casella	D.C.	A.M. 1954, New York University	Me
Hartshack, Richard Allen	N.J.	Harris, James Rainer, Jr.	
Hartshorn, Hubert Arthur	R.I.	Harris, Jack Holmes	
A.B. 1958, The George Washington University		Harris, Joseph Joseph	
Hardey, William Downey	N.I.	A.B. in Govt. 1951, U. S. 1951, The George Washington University	
Hare, Carolyn Kay	D.C.	Harris, Joseph	
Hartshorn, Cynthia Potemoy	D.C.	Harris, John Lawrence	
Hartshorn, Baxter Otell	Mass.	Harris, Louis Carol	
B.S. 1957, Boston University		Harris, Margaret Norman	Va
Hartshorn, Ralph Clifford	Me	A.B. 1948, Wesleyan College	D.C.
Hartshorn, Robert Alan	Va	Harris, Mary Joyce	
Hartshorn, Donald Ellen	D.C.	A.B. 1948, Antioch College	D.C.
Hartshorn, Alice Lewayne	Tenn.	Harris, Mary Louise	
Hartshorn, Frank Arthur	Me	B.S. 1947, Teachers College	
Hartshorn, Lester C.	Ark	A.B. 1945, Pennsylvania State University	
B.S. 1949, John Brown University		A.B. 1945, Pennsylvania State University	
Hartshorn, Evelyn Clara	D.C.	A.B. 1945, Pennsylvania State University	
A.B. 1945, Rosemont College		Harris, Shirley	
Hartshorn, Janet Louise	Va	B.B.A. 1951, College of the City of New York	
A.P. 1949 M.S. 1949, University of Missouri		J.D. 1957, The George Washington University	Me
Hartshorn, Maria Joan	D.C.	Harris, Thomas Green, Jr.	
Hartshorn, Gregory Newton	Va	A.B. 1948, University of Maryland	
Hartshorn, Thomas R.	N.I.	M.C.P. 1952, University of Pennsylvania	
A.B. 1957, University of Vermont		Harris, Walter George, Jr.	
Hartshorn, Howard Richard	R.I.	A.B. 1948, The George Washington University	
B.S. 1944, University of Rhode Island		Harris, William H. 1941, The George Washington University	
Hartshorn, Craig S.	Va	Harris, William H. 1941, The George Washington University	
A.B. 1948, State University		Harris, William H. 1941, The George Washington University	
Hartshorn, James Lee	Va	Harris, William H. 1941, The George Washington University	
Hartshorn, Helen Margaret	D.C.	Harris, William H. 1941, The George Washington University	
Hartshorn, Mary Alice	D.C.	Harris, William H. 1941, The George Washington University	
B.S. 1951, D.C. Teachers College		Harris, William H. 1941, The George Washington University	
A.M. 1951, American University		Harris, William H. 1941, The George Washington University	
Hartshorn, Miss Ann	D.C.	Harris, William H. 1941, The George Washington University	
Hartshorn, Robert Selby	Me	Harris, William H. 1941, The George Washington University	
Hartshorn, William Rouse	Ky	Harris, William H. 1941, The George Washington University	
A.B. 1951, The George Washington University		Harris, William H. 1941, The George Washington University	
Hartshorn, Frank Perry	N.C.	Harris, William H. 1941, The George Washington University	
Hartshorn, John Theodore	Va	Harris, William H. 1941, The George Washington University	
Hartshorn, Miss Camilla	D.C.	Harris, William H. 1941, The George Washington University	
Hartshorn, Robert L. 1950	Va	Harris, William H. 1941, The George Washington University	
Hartshorn, Thomas Joseph	D.C.	Harris, William H. 1941, The George Washington University	

[illegible]

Hawthorne, Victor John	Va.	Hearley, Ann, Law	Tenn.
A.B. 1948, Delaware University		A.B. 1958, Berea College	D.C.
Hawthorn, Robert Kenneth	Md.	Hedrick, John, Law	
Hawzen, Alonzo Randolph	D.C.	Hedrick, John, Law	
B.S. 1948, West Virginia State College		Hedrick, John, Law	
M.S. 1948, Georgetown University		Hedrick, John, Law	
Hawzen, Fred Brown, Jr.	Md.	Hedrick, John, Law	
Hawzen, Barbara M. Alister	D.C.	Hedrick, John, Law	
Hawzen, Clifford Jerome	Md.	Hedrick, John, Law	
Hawzen, Judith Lewis	D.C.	Hedrick, John, Law	
B.S. 1948, St. Paul's Polytechnic Institute		Hedrick, John, Law	
Hawzen, Lorenzo Betsey	D.C.	Hedrick, John, Law	
A.B. 1944, Miles College		Hedrick, John, Law	
Hawzen, Robert Milford	Md.	Hedrick, John, Law	
Hawzen, Robert Thomas	Md.	Hedrick, John, Law	
B.S. in P.S. 1950, Georgetown University		Hedrick, John, Law	
Hawzen, William Kenneth	D.C.	Hedrick, John, Law	
B.S. 1951, Emory University		Hedrick, John, Law	
Hawzen, Bradley Kane	D.C.	Hedrick, John, Law	
Hawzen, Mary Farnald	Md.	Hedrick, John, Law	
Hawzen, Nell Henry	D.C.	Hedrick, John, Law	
Hawzen, Samuel Merrill	Va.	Hedrick, John, Law	
A.B. 1947, Georgetown College		Hedrick, John, Law	
Hawzen, William Andrew, Jr.	Va.	Hedrick, John, Law	
B.S. in P.S. 1948, U.S. in M.E. 1951, Rose Polytechnic Institute		Hedrick, John, Law	
Hawzen, James M. Luch	Va.	Hedrick, John, Law	
A.B. 1947, University of Maryland		Hedrick, John, Law	
Hawzen, Stanley Donaldson	Ark.	Hedrick, John, Law	
Hawzen, Alice Evelyn	Va.	Hedrick, John, Law	
A.B. 1948, Florida State University		Hedrick, John, Law	
Hazel, Barbara Green	D.C.	Hedrick, John, Law	
A.B. 1948, Howard University		Hedrick, John, Law	
Hazel, John Patrick, Jr.	Va.	Hedrick, John, Law	
A.M. 1951, New York University		Hedrick, John, Law	
Hazel, John Patrick, Jr.	D.C.	Hedrick, John, Law	
B.A. 1947, University of Delaware		Hedrick, John, Law	
Hazel, Nancy Lee	D.C.	Hedrick, John, Law	
Hazel, Barbara Ann	Tenn.	Hedrick, John, Law	
Hazel, Billy Joe		Hedrick, John, Law	
B.S. 1948, Tennessee Polytechnic Institute		Hedrick, John, Law	
Hedden, Patrick Francis	Md.	Hedrick, John, Law	
Hedden, Barbara Marie	Md.	Hedrick, John, Law	
Hedden, Margaret Elizabeth	Conn.	Hedrick, John, Law	
A.B. 1948, Smith College		Hedrick, John, Law	
Hedden, Martin Thomas	D.C.	Hedrick, John, Law	
A.B. 1948, Haver College		Hedrick, John, Law	
Hedden, George Daniel	Pa.	Hedrick, John, Law	
B.S. 1948, U. S. Naval Academy		Hedrick, John, Law	
Hedden, Marvin Dale	Md.	Hedrick, John, Law	
A.B. 1944, Wheaton College		Hedrick, John, Law	
Hedden, Diana Hines	D.C.	Hedrick, John, Law	
A.B. 1947, Duquesne University		Hedrick, John, Law	
Hedden, Wade Coleman	Va.	Hedrick, John, Law	
B.S. 1944, A.M. 1947, George Washington College for Teachers		Hedrick, John, Law	
Hedden, Judith DeMara	Md.	Hedrick, John, Law	
Hedden, Mary Elizabeth	D.C.	Hedrick, John, Law	
Hedden, Bella	Ill.	Hedrick, John, Law	
M.D. 1950, University of Chicago		Hedrick, John, Law	
Hedden, Ross Edward	D.C.	Hedrick, John, Law	
Hedden, Russell C.	Md.	Hedrick, John, Law	
A.B. 1944, University of California		Hedrick, John, Law	
Hedden, Thomas Hedrick, Jr.	D.C.	Hedrick, John, Law	
Hedden, Daniel William, Jr.	Va.	Hedrick, John, Law	
Hedden, Gordon Richardson	Va.	Hedrick, John, Law	
B.S. 1948, University of Maine		Hedrick, John, Law	
Hedden, James Rufus, Jr.	Va.	Hedrick, John, Law	
A.B. 1954, College of William and Mary		Hedrick, John, Law	

Students Registered

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Hennrich, Sara Morgan A.B. 1942, Pennsylvania State College in Warren	Ga	Hennigan, Edward Thomas B.S. in Ed. 1947, Pennsylvania State Teachers College, East Stroudsburg	Va
Hennrich, William Arthur B.S. in Ed. 1942, E.E. 1949, University of Cincinnati	Va	Hennigan, Margaret Florence B.S. 1948, University of Pennsylvania	Va
Hennrich, John Charles A.B. 1942, Penn. Institute of Science	Pa	Hennich, Leroy Michael Henry, Jr.	Va Va
Hennrich, August Friedrich B.S. 1942, The George Washington University	Texas	Henry, John Alfred A.B. 1937, Bowdoin College	Maine
Hennrich, The George Washington University	Pa	Henry, John Hugh Henry, Philip Carl	Ark N.C.
Hennrich, John Edward B.S. 1942, The George Washington University	Md	Henry, Ross Bailey B.S. 1942, H.C. Teachers College	D.C.
Hennrich, William LeGrand A.B. 1942, University of South Carolina	D.C.	Henry, Shadrach Henry A.B. 1942, Hunter College	N.Y.
Hennrich, Lawrence Andrew A.B. 1942, University of South Carolina	Va	Henry, Verlan Davis B.S. in Ed. 1947, West Virginia State College	D.C.
Hennrich, John K. A.B. 1942, Catholic University of America	Va	Henry, William Lawrence Hemmel, Frederick M.	D.C. Md
Hennrich, John H. B.S. 1942, Catholic University of America	D.C.	Hemmel, Richard Charles B.S. 1942, U.S. Naval Academy	Ill
Hennrich, Remy Dean A.B. 1942, Northwestern State University	D.C.	Henshaw, Robert Harvey Henson, Joseph Clarence	Va D.C.
Hennrich, Elizabeth Anne B.S. 1942, University of Nebraska	Ohio	Hente, Albert Gene Henville, Stephen, John Orlan, Jr.	Md D.C.
Hennrich, Margaret Anne B.S. 1942, University of Nebraska	La	H.E.L. 1942, New York University	
Hennrich, Max Robert B.S. 1942, University of Michigan	Va	Hepner, Edward Harold B.S. 1947, Roskilde College	Va
Hennrich, Mary Margaret B.S. 1942, State University of New York	Ga	Herrick, Edward Lester A.B. 1942, The George Washington University	Md
Hennrich, Lawrence May B.S. 1942, University of South Carolina	Ill	Herbert, Joseph Owen Herbert, Thomas Oliver	D.C. Va
Hennrich, Louis S. B.S. 1942, University of South Carolina	Md	H.E.F. 1942, Catholic University of America	
Hennrich, Edna A.B. 1942, Bowdoin College	Va	Herrick, Katherine Alma Herrick, LaVerne Faye	N.J. Md
Hennrich, Frank John A.B. 1942, Bowdoin College	D.C.	B.S. 1942, Iowa State College of Agriculture and Mechanical Arts	
Hennrich, John University A.B. 1942, West Virginia University	D.C.	Herman, Donald Charles Herman, Marvin Neal	D.C. D.C.
Hennrich, Robert Stewart A.B. 1942, West Virginia University	Va	Herman, Monte Arnold A.B. 1942, The George Washington University	D.C.
Hennrich, Robert Stewart A.B. 1942, West Virginia University	Calif	Herman, Ruth Lee Herman, Theodore Corbin	D.C. Va
Hennrich, Robert Stewart A.B. 1942, West Virginia University	D.C.	B.S. 1942, Stanford University	
Hennrich, Robert Stewart A.B. 1942, West Virginia University	Ala	Hennrich, Carol Wilkins Hennrich, Fella	Va Cuba
Hennrich, Robert Stewart A.B. 1942, West Virginia University	D.C.	Hennrich, David Eugene Hennrich, Mary Kinsey	D.C. D.C.
Hennrich, Robert Stewart A.B. 1942, West Virginia University	Md	Hennrich, Harold Eugene Hennrich, Margaret Ann	Md Va
Hennrich, Robert Stewart A.B. 1942, West Virginia University	D.C.	Herr, Margaret Elizabeth Herr, Robert Roy	Va Florida
Hennrich, Robert Stewart A.B. 1942, West Virginia University		B.S. in Ed. 1942, Kent State University	Va
Hennrich, Robert Stewart A.B. 1942, West Virginia University	Calif	Herron, Mary Jane Herrick, John James	D.C. Md
Hennrich, Robert Stewart A.B. 1942, West Virginia University	Mass	B.S. 1942, Michigan State University of Agriculture and Applied Science	
Hennrich, Robert Stewart A.B. 1942, West Virginia University	D.C.	Herrington, Melvin Thomas, Jr. Herrington, Sally Ann	D.C. D.C.
Hennrich, Robert Stewart A.B. 1942, West Virginia University	Va	Herrington, Arthur Paul, Jr. Herron, Margaret M.	Va Md
Hennrich, Robert Stewart A.B. 1942, West Virginia University	D.C.	A.B. 1942, Pennsylvania University	
Hennrich, Robert Stewart A.B. 1942, West Virginia University	Pa	Herron, Michael Roy Herrington, Lee Barbara	Ind D.C.
Hennrich, Robert Stewart A.B. 1942, West Virginia University	Md	A.B. 1942, University of Michigan	
Hennrich, Robert Stewart A.B. 1942, West Virginia University	Md	Hess, Robert Miller Hess, Robert Miller	D.C. D.C.
Hennrich, Robert Stewart A.B. 1942, West Virginia University		Hessberger, Haze Kuhns	D.C.

[illegible]

Students Registered

617

General, Anna Elizabeth	D.C.	Haxon, William W.	D.C.
General, Howard	Va.	Hedrick, Louis	D.C.
General, Charles	Wa.	Huang, Maung Tun	Burma
General, Earl	Md.	Hedrick, James M.	D.C.
General, University of Akron	Va.	Hedrick, James George	Md.
General, Mary Hume	Va.	A.B. 1922, Georgetown College	
General, University of North		Ed.M. 1926, Johns Hopkins	
General, Fredrick		University	
General, West Institute of Naval	Va.	Hoi, Juhn Foung Ming	D.C.
General, Carl Leslie		Huang, An Ti	Vietnam
General, Duke University	D.C.	A.B. 1927, University of Western	
General, Robert, Jr.		Ontario	
General, Mississippi Southern	Va.	Huang, Dick	D.C.
General, Marvin C. Jr.		Hunt, Morton Floyd	Md.
General, Ernest	Va.	Hutchins, Karl Franklin	Va.
General, Fawcett	D.C.	B.S. 1920, M.S. 1921, Marshall	
General, George Perpendre College	D.C.	University	
General, Roger, Mariner		Ph.D. 1925, West Virginia University	
General, Leith Gabriel	Va.	Hobbs, John Charles	Md.
General, College of the Holy Cross	D.C.	B.S. 1924, University of	
General, Arthur		Saturn	
General, U.S. Naval Academy	D.C.	Hobbs, Charles Bentley, Jr.	Va.
General, Nina A. Carter	Va.	Hobbs, Christopher John	Va.
General, Leonard	D.C.	Hobbs, James Everett	D.C.
General, U.S. Naval Academy		A.B. 1924, University of Georgia	
General, West Virginia Wesleyan	Md.	Hobbs, Milton J. Lewis, Jr.	Va.
General, University of Pittsburgh		Hobbs, Robert Wayne II	Va.
General, Phillips University	Ind.	Hobbs, Richard Eileen	Del.
General, George Dawson	D.C.	B.S. 1923, University of	
General, The George		Delaware	
Washington University		Hobbs, Stanley Marshall	N.Y.
General, University of Maryland		A.B. 1923, Bucknell College	
General, Howard		Hobbs, Robert James	Md.
General, University of North		B.S. 1924, University of Maryland	
General, University of Maryland		Hobbs, Thomas Francis	Md.
General, University of Maryland		B.S. 1926, College of the City of	
General, University of Maryland		New York	
General, University of Maryland		M.B.A. 1929, New York University	
General, University of Maryland		Hobbs, Philip L.	N.J.
General, University of Maryland		A.B. 1928, Rutgers University	
General, University of Maryland		Hobbs, David MacMillan	Va.
General, University of Maryland		B.S. 1928, Georgetown University	
General, University of Maryland		Hobbs, Jack Allen	Va.
General, University of Maryland		Hobbs, Howard Emery, Jr.	Va.
General, University of Maryland		A.B. 1929, University of North	
General, University of Maryland		Carolina	
General, University of Maryland		Hobbs, Patricia Blaine, Jr.	Texas
General, University of Maryland		Hobbs, Albert George	Va.
General, University of Maryland		B.S. 1927, Virginia Ecological	
General, University of Maryland		Institute	
General, University of Maryland		Hobbs, Geraldine	Va.
General, University of Maryland		Hobbs, William Thomas	N.Y.
General, University of Maryland		Hobbs, Louis Howard II	Va.
General, University of Maryland		Hobbs, Thos. Donald	Va.
General, University of Maryland		Hobbs, Ronald Allen	Va.
General, University of Maryland		B.S. 1924, University of Cincinnati	
General, University of Maryland		Hobbs, Robert	N.Y.
General, University of Maryland		A.B. 1924, Kenyon College	
General, University of Maryland		Hobbs, Robert James	Va.
General, University of Maryland		Hobbs, George Frederick	Md.
General, University of Maryland		A.B. 1923, William Jewell College	
General, University of Maryland		Hobbs, Harry	N.J.
General, University of Maryland		Hobbs, Marvin James	Md.
General, University of Maryland		A.M. 1926, University of Chicago	
General, University of Maryland		Hobbs, Charles Lewis	D.C.
General, University of Maryland		Hobbs, Charles Michael	D.C.
General, University of Maryland		Hobbs, George Edward	N.J.
General, University of Maryland		B.S. 1926, University of Virginia	
General, University of Maryland		Hobbs, Edward Lewis	Va.
General, University of Maryland		B.S. 1926, Richmond College	
General, University of Maryland		A.M. 1928, The George Washington	
General, University of Maryland		University	

- Hoffman, Gerald James
B.S. in E.E. 1957, University of Buffalo
- Hoffman, John Stanley
A.B. 1948, Centre College
- Hoffman, Lloyd Kenneth
B.S. 1940, University of Oregon
- Hoffman, Maclyn Frances
Hoffman, Michael George
B.S. 1958, University of Arizona
- Hoffman, Rita Carol
Hoffman, Walter Joseph
B.S. 1950, D.C. Teachers College
- Hoffmann, Etta
Hoffmann, Gerhard Lorch
B.S. in E.E. 1950, University of Michigan
- Hogan, Barbara Carlton
Hogan, Charles DeLoach
Hogan, Douglas LeRoy
B.S. 1950, The George Washington University
M.S. 1954, Massachusetts Institute of Technology
- Hogan, Edward Marvin
A.B. 1946, Duquesne University
- Hogan, Richard Bruce
Hogan, Ruth Anne
Hogan, Virginia Paul
Hogan, William Francis
A.B. 1958, The George Washington University
- Hogan, William James
Hogg, Charles Edgar
Hogg, John Burton
Hogle, Gloria Leiland
Hogue, Raymond Miller
B.S. 1941, University of Florida
- Hohlt, Joan Gudulaga
A.B. 1950, University of Texas
- Holberg, Harold Eugene
Holbrook, Martha Helen
Holbrook, Edwin Pierre
B.C.E. 1957, Manhattan College
- Holbrook, Charles Clinton
B.S. in C.E. 1942, University of Maryland
- Holbrook, Fredonia Dale
Holler, Dorothy Almond
A.B. 1958, Texas State College for Women
- Holler, Eugene Lucile
A.B. 1948, University of California at Los Angeles
A.M. in Govt. 1946, The George Washington University
- Holler, Richard Langmuir
B.S. 1951, Columbia State University
- Holmes, Thomas Allen
B.E. 1944, Georgia Institute of Technology
- Holland, Francis Jeremiah
A.B. 1949, Catholic University of America
- Holland, Hugh Brown
B.S. 1941, Hampton Institute
A.M. 1947, Catholic University of America
- Holland, James Francis
Holland, John Howard
Holland, William Bryan
Hollander, Herman Lloyd
Hollander, Ruth Francis
- Holler, Joanne Elsie
Holler, Jasper Wilson
A.B. 1946, A.M. 1947, Ph.D. 1951, University of Southern California
- Holles, Lucille Theresa
B.S. 1950, D.C. Teachers College
- Holmes, Dorothy Jane
Holmeshead, Mary Byrne
Holmeshead, Robert Sullivan, Jr.
A.B. 1946, The George Washington University
- Holms, Alan Everett
Holms, Vincent Wentworth, Jr.
A.B. 1954, New York University
M.S. 1958, The George Washington University
- Holms, Virginia Ann
Hollon, Dan Sherwin
A.B. 1940, American University
A.M. 1950, Columbia University
- Holman, Mary Nola
A.B. in Govt. 1945, A.M. in Govt. 1948, The George Washington University
- Holmberg, Mary Elveta
Holmbeck, William Harold
B.S. 1946, University of Oklahoma
- Holmes, Donald Theodore
B.S. 1947, U.S. Naval Academy
M.S. 1948, Massachusetts Institute of Technology
- Holmes, Frank Allen
Holmes, Frank John
Holmes, John Steven
B.S. 1947, Arizona State College
- Holmes, John William
A.B. 1957, Columbia University
- Holmes, Larry
A.B. 1940, A.M. 1941, University of Iowa
A.M. 1949, Harvard University
- Holmes, Patricia Sue
Holmes, Richard Peyton
Holmes, Stanley Ann
Holmes, William Thomas
A.B. 1948, Wesleyan College
A.M. 1949, Columbia University
- Holmes, Samuel
Holmes, John Joseph
Holmes, John Chasovyan
A.B. 1942, University of Pennsylvania
- Holmberg, John Harriet
Holt, Lena Barker
Holmstrom, Anna K. F.
Holt, Barry Clay
B.S. 1958, University of Maryland
- Holt, Daniel Leonard
A.B. 1954, University of California
- Holt, Elmer Dean
Holt, Elmer Dupeul
Holt, John Henry
Holt, Margaret Gladys
Holt, Raymond Donald
Holt, Samuel Louis, Jr.
Holt, William Harry
B.S. in Eng. 1957, The George Washington University
Wash. and Phila.
- Holton, Charles
Holton, Louis Vance
Holton, Thomas Maxwell
A.B. 1941, Marshall College

Students Registered

619

Hart, James Anthony	Pa	Hart, Gustaf Milton	Va
Hart, John, 1907, The George Washington University	Pa	Hart, Henry Joseph	Va
Hart, Marie	Va	B.S. 1941, Lehigh University	
Hart, Frank		M.D. 1936, The George Washington University	
Hart, E. L. 1934, The George Washington University		Hart, Melvin Edwin	Va
Hart, Robert Riley	Va	Hartshack, Russell H.	Va
Hart, John Alton	D.C.	Hartshack, Charles William	Pa
Hart, Sarah	Md	Hartshack, Andrew Moore	Wash
Hart, E.	Pa	A.B. 1938, LL.B. 1944, University of Washington	
Hart, University of Maryland		Hartshack, William	Va
Hart, Clark	Va	Hartshack, Fred Thomas	N.J.
Hart, University of Arkansas		Hartshack, Mary Anne	D.C.
Hart, Leon Allen	D.C.	Hartshack, Ross Charles	Va
Hart, Leo, Jr.	D.C.	A.B. 1948, Georgetown College	
Hart, Booth	Tenn	A.M. in Law, 1954, The George Washington University	
Hart, H.	D.C.	Hartshorn, John Joseph	N.Y.
Hart, Knoxville College	D.C.	A.B. 1902, Harvard University	
Hart, University of Chicago		M.P.A. 1907, Syracuse University	
Hart, Hamilton		Hartshorn, Edmund	Md
Hart, Ohio Wesleyan University	Ohio	B.S. 1948, College of the City of New York	
Hart, E. L. 1934, Temple University	Md	M.S. 1906, The George Washington University	
Hart, E. L. 1934, Temple University	Va	Hartshorn, Eugene Gary	D.C.
Hart, E. L. 1934, Virginia Polytechnic Institute		A.B. 1948, The George Washington University	
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Vladimir DeWitt, Jr.	Md
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Edwin Lewis	Va
Hart, E. L. 1934, Virginia Polytechnic Institute		B.S. 1937, University of Pennsylvania	
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Carolyn Ray	Oreg.
Hart, E. L. 1934, Virginia Polytechnic Institute		B.S. 1938, Oregon State College	
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, George Anne	Md
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, John Harold	Va
Hart, E. L. 1934, Virginia Polytechnic Institute		B.S. in M.E. 1948, University of Buffalo	
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, James Cecilia	D.C.
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, William Geoffrey	D.C.
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, William Stanley	Mich
Hart, E. L. 1934, Virginia Polytechnic Institute		A.B. 1948, Michigan State University of Agriculture and Applied Science	
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Leland	Md
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Thomas	Md
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Howard Jr.	D.C.
Hart, E. L. 1934, Virginia Polytechnic Institute		A.B. 1944, Pennsylvania State University	
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Alfred	Iowa
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Raymond	Md
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Eugene Lockhart	D.C.
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Benjamin R.	Neb.
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Albert	W.Va
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Franklin Deane	Maine
Hart, E. L. 1934, Virginia Polytechnic Institute		B.S. 1939, Stanford College	
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Herbert Winston	Va
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Ralph Brewster	Md
Hart, E. L. 1934, Virginia Polytechnic Institute		B.S. 1942, Southwest Missouri State College	
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Lambert Ann	N.Y.
Hart, E. L. 1934, Virginia Polytechnic Institute		A.B. 1909, Cornell University	
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Anne Corcoran	Va
Hart, E. L. 1934, Virginia Polytechnic Institute		A.B. 1909, Eastern College	
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, James Richard	Va
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Russell Beverly	Md
Hart, E. L. 1934, Virginia Polytechnic Institute		B.S. in E.E. 1909, University of Oklahoma	
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Charles	D.C.
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Lawrence Samuel	Md
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Madison	Md
Hart, E. L. 1934, Virginia Polytechnic Institute		B.S. in E.E. 1906, University of Texas	
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Margaret Louise	Va
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Minnie Shaw	Va
Hart, E. L. 1934, Virginia Polytechnic Institute		Hartshorn, Natory Lee	Conn.

House, Thaddema Overton	D.C.	Huechling, Ma	
A.B. 1937, D. C. Teachers College		Hubbard, Thelma Lane	
A.M. 1938, Howard University		A.B. 1938, Augustana College	
Howse, Walter Grant	W Va	Hubbard, Daniel	
B.S. in Ch.E. 1943, West Virginia University		Hubbard, Elbert Mervin	
Houserholder, Charles David	D.C.	A.B., LL.B. 1937, University of Oklahoma	
Housen, Belle Jeanette	Ma	Hubbard, Leslie Allen	
Houser, Frederick Russell	Pa	Hubbard, Martha Lucille	
A.B. 1948, A.M. in Govt. 1950, The George Washington University		Huchel, Carole Carol, Jr.	
Houston, Robert Howard	Va	A.B. 1950, University of Maryland	
Houston, Sydney Sue	Ark	Huddle, Edna Nadine	
Hovenden, Joan Lanning	N.J.	Huber, Donald Keith	
A.B. 1958, Mount Holyoke College		B.S. in M.E. 1941, I.D. 1949, Northwestern University	
Howard, Arthur Lindsey	Va	Huber, Julia Jane	
Howard, Betty Kaye	Va	B.S. 1958, University of Illinois	
Howard, Claudius Stevens, Jr.	Pa	Huber, Margaret Ann	
Howard, Dwight Eugene	Va	A.B. 1957, St. Joseph College	
B.S. 1955, Iowa State College of Agriculture and Mechanic Arts		Huber, Philip Francis	
Howard, Francis Burke	Va	A.B. 1955, La Salle College	
B.M.E. 1951, Ohio State University		Huch, Angela Catherine	
Howard, Fred Elmer	Me	Hudson, Norman Elmer	
Howard, Gary Elmer	Ohio	B.S. 1946, Marquette University	
Howard, Herman Amos	Va	Hudson, Ross Dore	
A.B. 1951, Virginia Union University		Hudgins, John Jefferson	
Howard, Jay William		LL.B. 1948, LL.M. 1950, The George Washington University	
A.B. 1955, The George Washington University	D.C.	Hudson, Howard Emory	
Howard, John Michael	D.C.	B.S. 1951, Kansas State College of Agriculture and Applied Science	
Howard, Rex Lawrence	Me	Agriculture	
B.S. 1950, D. C. Teachers College		Hudson, Jerry Raydon	
Howard, Rosamary Evelyn	D.C.	H. Hon. John, Frederick	
Howard, Rennie Lee	D.C.	A.B. 1951, A.M. 1953, The George Washington University	
Howard, Suzanne	Texas	Hudson, Lloyd George	
A.B. 1958, University of Texas		Hudson, Peyton Thomas	
Howarth, Jane Margaret	N.C.	Hudson, Thomas Henry Whisman	
Howe, Hella Jean	Va	Hudson, Ross M.	
B.S. 1951, State University of New York		H. J. William, Frederick	
Howe, William Bradford	N.H.	B.S. in E.E. 1950, Washington University	
B.S. 1950, M.S. 1952, University of Vermont		Huffer, Henry Robert	
Howell, Marie Coline	D.C.	B.S. 1954, University of Maryland	
B.S. 1957, D. C. Teachers College		Huffman, John Thomas	
Howell, Ruth Ann	D.C.	Huffman, Ray Thomas	
B.S. 1950, D. C. Teachers College		B.S. 1950, Bowdoin Green State University	
Howes, Floyd Leroy, Jr.	Pa	Huffman, Russell Charles	
Howes, James K., Jr.	Va	Huffman, William Harry	
Howie, John Vogel	Mass	Hug, Thomas Francis	
Howland, Arthur Ray, Jr.	Va	A.B. 1957, State Hall University	
Howland, Richard Cabot	N.Y.	A.B. 1955, Middlebury College	
Howland, William Charles	D.C.	Howland, John E., Jr.	
Howson, Hubert Farnham	N.Y.	Howland, Ann Hightower	
A.B. 1946, University of Massachusetts		Howland, Charles Willis	
Howe, Hubert Edmund	Va	A.B. 1957, University of Texas	
A.B. 1947, Michigan State University		Howland, Ernest Earl	
of Agriculture and Animal Science		A.B. 1951, Penn. University	
LL.B. 1949, University of Michigan	D.C.	Hughes, James Howe	
Howe, Edgar, Jr.	Pa	B.S. in M.E. 1948, University of Oklahoma	
A.B. 1950, Trinity College		Hughes, Lucille Wilbur	
Howe, John Joseph, Jr.	Me	Hughes, Mary Fay	
A.B. 1957, Trinity College		A.B. in Eng. 1954, Arizona State College Flagstaff	
Howie, Anne Mildred		Hughes, Nathan Bress, Jr.	
B.S. in Ed. 1943, University of Maryland		A.B. 1954, University of Maryland	
A.M. 1946, Columbia University	D.C.	Hughes, Patrick Edward	
Howe, I. John Harrison	D.C.	Hughes, Peter Helen	
Howe, Chung-Yun		B.S. 1957, Lincoln Memorial University	
A.B. 1950, St. John's University, China		Hughes, Robert Ligon	
A.M. 1952, The George Washington University		LL.B. 1951, University of Louisville	

Students Registered			621
Thomas Emory			
St. Mary's Seminary and	Md	Hurley, Dwight Marshall	Md
University of Maryland		B.S. 1948, University of Maryland	
Wesley F. Ponce		Hurley, Louis Marshall	Md
University of Maryland		B.S. in Ed. 1949, College of the City	
John K. Kneel		of New York	
1948, The George Washington	Va	AM in Ed. 1948, The George	
University	D.C.	Washington University	
Stephen		Hurley, William John	Va
University of Florida	Va	B.S. 1947, M.H.A. 1941, College of the	
University of Maryland		City of New York	
LL.B. 1937, Yale University	D.C.	Hurt, Carl Watson Jr.	Va
University of Maryland		A.B. in Geog. 1941, The George	
Richard	Va	Washington University	
University of Maryland	D.C.	Hurt, Arthur Charles III	Calif
University of Maryland	D.C.	A.B. 1948, Stanford University	
University of Maryland	D.C.	Hurt, Charles Raymond	D.C.
The George Washington	N.Y.	B.S. 1944, M.S. 1947, Tennessee	
University		Agricultural and Industrial State	
University of Maryland		University	
University of California	Calif	Hurt, Norma Elizabeth	D.C.
University of Maryland		Hurwitz, Alan Walter	D.C.
University of Maryland		A.B. 1942, M.S. in Ed. 1944, Syracuse	
University of Wisconsin	Va	University	
University of Wisconsin		Hurwitz, Pearl Joan	D.C.
University of Wisconsin		Husar, Frances Stephen	Md
University of Wisconsin		B.S. 1947, University of Maryland	
University of Wisconsin		Huse, Zella Mills	Va
University of Wisconsin		A.B. in Ed. 1946, Eastern Washington	
University of Wisconsin		University of Education	
University of Wisconsin		AM in Ed. 1948, The George	
University of Wisconsin		Washington University	
University of Wisconsin		Husar, Richard William	Fla
University of Wisconsin		A.B. 1948, Florida University	
University of Wisconsin		Husar, Evelyn Marie	D.C.
University of Wisconsin		Husar, Louise Clark	Va
University of Wisconsin		Husar, Walter Francis	Va
University of Wisconsin		Husar, Ruth Elizabeth	Va
University of Wisconsin		B.S. 1947, Madison College	
University of Wisconsin		B.S. in LS. 1947, George Peabody	
University of Wisconsin		College for Teachers	
University of Wisconsin		Husar, John Lee	D.C.
University of Wisconsin		B.S. 1947, University of Idaho	
University of Wisconsin		Husar, Alan Taylor	D.C.
University of Wisconsin		B.S. in B.A. 1947, Ohio State University	
University of Wisconsin		Husar, Edna W.	Calif
University of Wisconsin		B.S. 1946, The George Washington	
University of Wisconsin		University	
University of Wisconsin		Husar, Richard Lee	Pa
University of Wisconsin		Husar, John Lee Jr.	N.J.
University of Wisconsin		A.B. 1947, Washington University	
University of Wisconsin		Husar, Susan Marie	D.C.
University of Wisconsin		Husar, Ann	D.C.
University of Wisconsin		A.B. 1948, LaPied University	
University of Wisconsin		Husar, Charles Eugene	D.C.
University of Wisconsin		Husar, Harold E.	Va
University of Wisconsin		Husar, Thomas David	Pa
University of Wisconsin		Husar, Lucan Lee Jr.	Ind
University of Wisconsin		A.B. 1944, Brigham Young University	
University of Wisconsin		Husar, Eugene Edward	D.C.
University of Wisconsin		Husar, John Lee	Va
University of Wisconsin		Husar, Frances Marie	D.C.
University of Wisconsin		Husar, Martin Robert	D.C.
University of Wisconsin		Husar, Paul James	N.Y.
University of Wisconsin		B.S. 1943, Cornell University	
University of Wisconsin		Husar, Virginia Paul	D.C.
University of Wisconsin		B.S. 1947, La C. Teachers College	
University of Wisconsin		Husar, Richard	D.C.

Helena Lull, an			
B.S. 1942, D.C. Teachers College	D.C.	Jaeger, Allan Thomas	Iowa
B.S. 1942, D.C. Teachers College	D.C.	Jaeger, Harold Edward	Md.
B.S. 1942, Queen's College	D.C.	A.B. 1940, Western Reserve	
B.S. 1942, Monmouth College	Ga.	University	
B.S. 1942, Monmouth College	Ga.	Jaegerman, Minnam P.	Md.
B.S. 1942, Harvard University	D.C.	A.B. 1942, Goucher College	
B.S. 1942, D.C. Teachers College	D.C.	Jacobske, Walter Karl	Va.
B.S. 1942, D.C. Teachers College	D.C.	Jaffe, Daniel Leonard	Md.
B.S. 1942, University of Maryland	Va.	R.M.F. 1941, College of the City	
B.S. 1942, University of Maryland	Va.	of New York	
B.S. 1942, City State	D.C.	Jaffe, Judith Zofia	D.C.
B.S. 1942, City State	D.C.	Jaffe, Elizabeth Rodgers	D.C.
B.S. 1942, New York University		A.B. 1942, Smith College	
B.S. 1942, Montana State University	Alaska	Jager, Harlan C.	Oreg.
B.S. 1942, Montana State University	Va.	B.S. 1940, Oregon State College	
B.S. 1942, Montana State University	Va.	Jager, Bruce Anderson	Wyo.
B.S. 1942, Montana State University	Va.	B.S. in Ed. 1940, University of	
B.S. 1942, Montana State University	Va.	New Mexico	
B.S. 1942, Montana State University	Va.	Jamborsky, Richard Julius	Tenn.
B.S. 1942, Montana State University	Va.	A.B. 1942, The George Washington	
B.S. 1942, Montana State University	Va.	University	
B.S. 1942, Montana State University	Va.	James, Abraham L.	D.C.
B.S. 1942, Montana State University	Va.	A.B. 1942, University of Liberia	
B.S. 1942, Montana State University	Va.	James, Donald Richard	Va.
B.S. 1942, Montana State University	Va.	A.B. 1942, Seton Hall University	
B.S. 1942, Montana State University	Va.	James, Elizabeth Robertson	Md.
B.S. 1942, Montana State University	Va.	A.B. 1942, Goucher College	
B.S. 1942, Montana State University	Va.	A.M. 1942, Columbia University	
B.S. 1942, Montana State University	Va.	James, George Elbert	D.C.
B.S. 1942, Montana State University	Va.	B.S. in E.E. 1940, University of	
B.S. 1942, Montana State University	Va.	Washington	
B.S. 1942, Montana State University	Va.	James, James Edward, Jr.	Va.
B.S. 1942, Montana State University	Va.	James, Jerry Preston	D.C.
B.S. 1942, Montana State University	Va.	A.B. 1942, Phillips University	
B.S. 1942, Montana State University	Va.	James, William Chester	Pa.
B.S. 1942, Montana State University	Va.	A.B. 1942, Harvard University	
B.S. 1942, Montana State University	Va.	Jamison, Lee	D.C.
B.S. 1942, Montana State University	Va.	Jamison, Elizabeth Cecilia	D.C.
B.S. 1942, Montana State University	Va.	A.B. 1942, The George Washington	
B.S. 1942, Montana State University	Va.	University	
B.S. 1942, Montana State University	Va.	A.M. 1942, Columbia University	
B.S. 1942, Montana State University	Va.	Jamison, Karen Grace	Va.
B.S. 1942, Montana State University	Va.	Jamison, Bernard William	Va.
B.S. 1942, Montana State University	Va.	A.B. 1942, A.M. 1942, University of	
B.S. 1942, Montana State University	Va.	Delaware	
B.S. 1942, Montana State University	Va.	Jamison, Richard Jr.	D.C.
B.S. 1942, Montana State University	Va.	B.S. 1942, D.C. Teachers College	
B.S. 1942, Montana State University	Va.	Jark, Frank Peter	Mich.
B.S. 1942, Montana State University	Va.	B.S. 1942, Central Michigan College	
B.S. 1942, Montana State University	Va.	Jarvis, Edward A.	N.Y.
B.S. 1942, Montana State University	Va.	A.B. 1942, University of	
B.S. 1942, Montana State University	Va.	Pennsylvania	
B.S. 1942, Montana State University	Va.	Jarvis, William Brooks	Va.
B.S. 1942, Montana State University	Va.	Jarvis, William Albert	Md.
B.S. 1942, Montana State University	Va.	A.B. 1942, University of Connecticut	
B.S. 1942, Montana State University	Va.	Jarvis, Albert Anton	D.C.
B.S. 1942, Montana State University	Va.	Jarvis, George Eugene	D.C.
B.S. 1942, Montana State University	Va.	A.B. 1942, University of Maryland	
B.S. 1942, Montana State University	Va.	Jarvis, John Joseph	Oreg.
B.S. 1942, Montana State University	Va.	Jarvis, Robert Francis	Va.
B.S. 1942, Montana State University	Va.	B.S. in Ed. 1942, Ed.M. 1943,	
B.S. 1942, Montana State University	Va.	University of Virginia	
B.S. 1942, Montana State University	Va.	Jarvis, Patricia Grace	Va.
B.S. 1942, Montana State University	Va.	Jarvis, Richard Grace	Va.
B.S. 1942, Montana State University	Va.	A.B. 1942, College of William and	
B.S. 1942, Montana State University	Va.	Mary	
B.S. 1942, Montana State University	Va.	Jarvis, Virginia May	Md.
B.S. 1942, Montana State University	Va.	Jarvis, Belle Rosa	D.C.
B.S. 1942, Montana State University	Va.	Jarvis, Leonard Leon	Va.
B.S. 1942, Montana State University	Va.	B.S. 1942, State University of Iowa	
B.S. 1942, Montana State University	Va.	Jarvis, Dale	D.C.
B.S. 1942, Montana State University	Va.	B.S. 1942, University of Maryland	

Jarvis, William Taber	Md	Jeon, Jeong Goo	Jeon, Jeong Goo
A.B. 1927, West Virginia University		A.B. 1946, Seoul National University	
Jastram, Harold Dudley	S.D.	Jenks, Albertina Stewart	
B.S. 1937, South Dakota State		Jenks, Constance	
College		A.B. 1934, A.M. 1938, Oxford	
Jardou, Judith Ann	Va	University, England	
Jarvis, Benjamin, Andrew	D.C.	Jenkinson, William James	
Jaworski, Kazimierz Jan	D.C.	B.S. 1948, Manhattan College	
Jeckels, Eva Beatriz	D.C.	Jessel, Mary Amelia	
Jeeves, Saml	Md	Jessup, Phoebe Louisa	
J.D. 1925, University of Virginia		Jester, Dorothy Margaret	
Jedlicka, Charles Jr.	N.Y.	A.B. 1935, A.M. 1939, Stanford	
B.S. 1931, U.S. Merchant Marine		University	
Academy		Jester, William Andrew	
Jeffers, Clifford James	Va	B.S. in Civil Eng., Drexel Institute	
Jeffers, Frank Lee	Va	of Technology	
Jeffery, Donald Dyer	Va	Jettison, Pauline Frances	
B.S. 1937, University of Wisconsin		Jewell, Harold Louis	
Jeffrey, Peter	Ohio	Jewell, Kathleen Ellen	
B.S. in B.A. 1955, Ohio State		Jewell, Vincent	
University		Jewett, Howard Vincent, Jr.	
Jeffrey, Sara Jean	Va	Jewett, Robert Anthony	
Jeffries, Claude Edward	Ohio	Jewett, Linda Cleaves	
B.S. 1938, U.S. Naval Academy		Jinich, Myron	
Jeffries, Emma Jermain	Md	Jones, Margaret Gerald	
B.S. 1943, North Carolina		B.S. 1942, College of Puget Sound	
Agricultural and Technical College		Jones, Anna	
Jeffries, James Douglas	D.C.	Jorgensen, Har	
Jellison, Robert	Md	Jochum, Joseph B.	
B.S. 1940, North Carolina		B.S. 1947, U.S. Naval Academy	
Agricultural and Technical		Joel, Leo	
College		B.S. 1931, College of the City of	
Jellison, Betty L.	D.C.	New York	
B.S. in Ed. 1936, New Jersey State		Joel, Ronald Arthur	
Teachers College, Trenton		A.B. 1934, Pomona College	
Jenkins, Arthur Elmo	D.C.	A.M. 1936, Yale University	
Jenkins, Arthur Lee	Fla	Johnson	
L.L.B. 1947, National University		Johnson, Eleanor	
Jenkins, Doris Keyes	Md	Johnson, William Walter Frederick	
B.M.E. 1946, University of Virginia		B.S. 1937, Rose Polytechnic Institute	
Jenkins, Elmer Thompson	D.C.	Johnson, Ha. A. Ingram	
B.S. 1941, Madison College		Johnson, Lyndal Kathleen	
L.L.M. 1949, University of Maryland		Johnson, Claudia Stone	
Jenkins, James Bryant	Va	Johnson, Alfred Eugene, Jr.	
Jenkins, John Smith	D.C.	Johnson, Anna Janice	
A.B. 1954, Lafayette College		Johnson, Arthur	
Jenkins, Kenneth Eugene	Md	A.B. 1941, University of Alabama	
Jenkins, Paul Thomas	Va	Johnson, Barbara Ann	
Jennings, Charles Henry III	Va	Johnson, Barbara Lee	
A.B. 1951, University of Pittsburgh		Johnson, Bernard Ignatius	
Jennings, Charles Henry		B.S. 1954, University of Maryland	
M.S. 1952, University of Denver		Johnson, Bruce Poweater	
Jennings, Clara Arthur	Ariz	A.B. 1956, University of Southern	
A.B. 1945, University of Arizona		California	
Jennings, James Edwin	D.C.	Johnson, Bruce McCoy	
Jennings, John Edward	Mo	A.B. 1950, Carleton College	
A.B. 1937, Central College		Johnson, Bruce Lee	
Jennings, Neal Cameron	Va	B.S. in M.E. 1948, Virginia	
B.S. in C.E. 1941, Iowa State College		Polysomnography Institute	
of Agriculture and Mechanic Arts		Johnson, Carl Richard	
Jennings, Pauline R.	Md	Johnson, Charles	
A.B. 1947, East Tennessee State		A.B. 1946, Princeton University	
Teachers College		L.L.B. 1949, Harvard University	
Jennings, Robert Lee	Md	Johnson, Charles Austin	
Jennings, Thomas Davis IV	Fla	A.B. 1950, M.B.A. 1958, Harvard	
B.S. in E.E. 1954, University of		University	
Miami		Johnson, Charles Lenwood	
Jennings, William Huxley	Ill	Johnson, Charles Elton	
B.S. 1931, Duke University		Johnson, Charles Raymond	
Jensen, Arvid Carl	Wis	Johnson, Charles Spurgeon	
B.E. 1935, Wisconsin State College		Johnson, Christine Pauline	
Jensen, Margaret McCallip	Va	A.B. 1951, Clark College	
A.B. 1948, University of California		Johnson, Clifford Lee, Jr.	
Jensen, Norman Lester	Va		

[illegible]

Jolles, Samuel	Md	Jones, Murray Edwin	N.Y.
B.S. 1956, University of Maryland		B.S. 1952, Central State College	La
Jolles, Joseph Kent	Idaho	Jones, Reba Ellen	Va
Joliffe, Larry Michael	Va.	Jones, Richard Griffin	Va
B.S. 1957, University of Wisconsin		Jones, Robert Alan	
Jolly, John Gilbert	Ind	Jones, Sammis Paul	
Jones, Anna Beth	Iowa	B.M.E. 1954, North Carolina State College	N.C.
Jones, Arthur Daniels, Jr.	D.C.	Jones, Vionette Eugenia	
B.S. 1951, U. S. Naval Academy		B.S. 1954, Maryland State Teachers College, Bowie	Ind
Jones, Aubrey Bennett, Jr.	Md	Jones, Wilson Tolman	D.C.
Jones, Aubrey H.	Ill	A.B. 1955, University of Utah	
Jones, Barbara Jean	D.C.	Jordan, Anthony Richard	
B.S. 1956, D. C. Teachers College		A.B. in Comm. 1958, The George Washington University	N.C.
Jones, Betty Ann	Texas	Jordan, Gert Lynn	Md
B.B.A. 1958, University of Texas		Jordan, Phil Wernham	
Jones, Carolyn Anita	D.C.	B.S.C. 1948, University of Georgia	D.C.
Jones, Charles Hamilton	D.C.	Jordan, Samuel Cecil	Kent
Jones, Charles Stanley	D.C.	Jordan, Edward Cotton	
B.S. in C.E. 1951, Duke University		B.S. 1945, U. S. Naval Academy	
Jones, Chester Glenn	Va.	Jordan, Gert Lynn	Md
Jones, Cynthia Marie	D.C.	B.S. in C.E. 1958, University of Kansas	
B.S. 1958, D.C. Teachers College		Jordan, Phil Wernham	D.C.
Jones, Denver R.	D.C.	B.S.C. 1948, University of Georgia	
B.S. 1949, North Carolina Agricultural and Technical College		Jordan, Wendy Marie	Philad
Jones, Donald Claiborne	D.C.	Jorge, Leticia P.	
Jones, Donald Wayne	Mo.	B.S.E. 1941, National Teachers College, Philadelphia	Md
Jones, Dorothy H.	Va.	Jorgensen, Florence Goldier	Va
Jones, Dorothy Wice	Va.	A.B. 1945, University of Utah	Md
Jones, Dorrie Jean	Calif	Jorgensen, Kay Rose	Md
B.S. 1948, University of Maryland		Jorgensen, Robert Goldier	
Jones, Douglas Leonard	Va.	Jorgensen, Robert Goldier	Md
Jones, Edith Becker	Va.	Jorgensen, Mary Rose	N.Y.
Jones, Elizabeth Campbell	Md	Jorgensen, Mary Rose	
Jones, Elizabeth Ferguson	D.C.	Jorgensen, Mary Rose	
Jones, Emily Robert	Pa.	Jorgensen, Mary Rose	
Jones, Frank Ross	La.	Jorgensen, Mary Rose	
A.B. 1958, The George Washington University		Jorgensen, Mary Rose	
Jones, Gail Augusta	Md	Jorgensen, Mary Rose	
Jones, Geraldine Elmer	D.C.	Jorgensen, Mary Rose	
B.S. 1952, Hampton Institute		Jorgensen, Mary Rose	
Jones, Gladys Mayday	Minn	Jorgensen, Mary Rose	
A.B. 1950, University of Minneapolis		Jorgensen, Mary Rose	
Jones, Guy MacLean, Jr.	Va.	Jorgensen, Mary Rose	
Jones, Harry Chapman III	Pa.	Jorgensen, Mary Rose	
B.S. 1957, Yale University		Jorgensen, Mary Rose	
Jones, Harry Lee	Texas	Jorgensen, Mary Rose	
B.S. A.B. 1948, University of Texas		Jorgensen, Mary Rose	
Jones, Helen Glendol	Md	Jorgensen, Mary Rose	
B.S. 1948, D.C. Teachers College		Jorgensen, Mary Rose	
Jones, Hattie Pearl, Jr.	D.C.	Jorgensen, Mary Rose	
Jones, James Donald	Okla	Jorgensen, Mary Rose	
B.S. 1948, Southeastern State College		Jorgensen, Mary Rose	
Jones, John Navell	Ark	Jorgensen, Mary Rose	
A.B. in Comm. 1957, The George Washington University		Jorgensen, Mary Rose	
Jones, John Reese	D.C.	Jorgensen, Mary Rose	
Jones, Joseph D.	Va.	Jorgensen, Mary Rose	
B.S. 1951, Hampden-Sydney College		Jorgensen, Mary Rose	
Jones, Joseph N. Van	Va.	Jorgensen, Mary Rose	
Jones, Joseph	Md.	Jorgensen, Mary Rose	
A.B. 1957, The George Washington University		Jorgensen, Mary Rose	
Jones, Mary Eleanor	Va.	Jorgensen, Mary Rose	
Jones, Mary Jamieson	Md	Jorgensen, Mary Rose	
Jones, Mary Lou	D.C.	Jorgensen, Mary Rose	
B.S. 1952, Virginia State College		Jorgensen, Mary Rose	
Jones, Max S.	Md	Jorgensen, Mary Rose	
Jones, Marilyn Ralph	Md	Jorgensen, Mary Rose	
B.S. 1954, Pennsylvania State Teachers College		Jorgensen, Mary Rose	

Students Registered

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Johnson, George Walter Johannes, Leo Jacob Johnson, William Robert	Va Va Va	Kane, Thomas John A.B. 1942, Cornell University Kane, William Louis Kanter, Joseph Norman B.S. 1934, Bowdoin College M.S. 1937, The George Washington University	N Y Va MJ
Kantor, Hedy Kantor, Martha Marie Katz, J. Edgar, Jr. A.B. 1940, The George Washington University	Md D.C. Va	Kanter, Homer Neal A.B. 1937, The George Washington University	Md
Kantor, M. Ann, Jr. Kantor, Louis Alexander Kantor, James Patrick Kantor, Ann Katherine Kantor, Philip Wood A.B. 1940, The George Washington University	D.C. Pa Va Pa D.C.	Kanter, Henry Irwin Kaplan, Frank James, Jr. Kaplan, Arthur Lewis Kaplan, Barbara May Kaplan, Ernest Harvey Kaplan, Charles Marvin B.S. 1931, Massachusetts Institute of Technology	Mass Va N Y D.C. Mass Tenn.
Katz, David Lyon A.B. 1934, University of Miami Katz, Scott A.B. 1930, Indiana University	Fla N I	Kaplan, Edward Herbert Kaplan, George Kaplan, Henry A.B. 1943, A.M. 1942, The George Washington University	D.C. Va Ill
Katz, Helen M. Katz, Edna Jane Katz, Jesse Albert A.B. 1937, The George Washington University	D.C. Va D.C.	Kaplan, Irwin B.S. 1933, College of the City of New York M.S. 1936, Pennsylvania State University	Va
Katz, Joan Katz, Mary Ann A.B. 1936, Harvard University	D.C. D.C.	Kaplan, John Edlin Kaplan, Julius A.B. 1936, Wesleyan University	D.C. D.C.
Katzen, Robert Berwin Katzen, Nicoletta Mary Katzen, Basil Lewis B.S. 1934, Maryland State Teachers College, Pikesville	D.C. D.C. Md	Katzen, Robert Lee Katzen, Ruth Lamar Kaplan, Abraham A.B. 1944, A.M. 1946, Punjab University, Pakistan	D.C. D.C. India
Katzen, Edgar Vasiloff Katz, Louise Olga Katz, Andrew Charles, Jr. B.S. 1936, The George Washington University	Va Conn Va	Kaplan, Alex B.S. 1943, North Dakota State Teachers College A.M. 1944, University of California	D.C.
Katz, Lawrence David Katz, Jon Louis Katz, Lawrence B.S. 1941, D.C. Teachers College A.M. 1942, The George Washington University Diploma in Law 1944, University of Latvia	Israel Mass D.C.	Kaplan, Edward Joseph B.F.E. 1933, New York University Katz, Sarah Katz, Elizabeth Breiman A.B. 1934, University of Nebraska Katz, Albert, Sr. A.B. 1934, Istanbul American College for Girls, Turkey	Md Turkes Nebr
Katz, Ronald Edward Katz, Kurt Katz, George Nuk B.S. 1942, West Virginia University	Md D.C. Md	Kaplan, Tahir Katsouras, Demetrios Evangelos A.B. 1935, Mississippi Southern College	D.C. D.C.
Katz, Jerry Katz, Robert Adam A.B. 1941, University of Tennessee Katz, Joseph Katz, John A.B. 1936, Georgetown University	D.C. Mass Thailand Md	Katz, Patricia Ann Katz, Stanley Edward A.B. 1937, The George Washington University	Pa D.C.
Katz, Louis B. A.B. 1937, Brooklyn College Katz, Philip Aaron Katz, Robert Edward B.S. 1936, University of New Hampshire	D.C. Va D.C. Va Va	Katz, Anna Beata Katz, George Howard Katz, Edmund David Katz, Emma A.B. 1936, University of Budapest Katz, Fata Nishida A.B. 1937, The George Washington University Katz, Arnold Lewis A.B. 1934, University of Maryland Katz, Leahy Katherine Katz, Min A.B. 1934, Bowling Green State University	Md Va D.C. Md Md D.C.
Katz, Robert Revely	Va	Katz, Ruth Flora	Va

Kartalis, Andrew	Pa.	Kazar, John Dryden, Jr.	Mass.
B.S. in C.E. 1954, Pennsylvania State University		A.B. 1950, Tufts University	Pa.
Karwaski, Olga	Md.	Kaulow, Kay Joan	Va.
B.S. in Ed. 1942, College of the City of New York		Kazmierczak, Gerald Benjamin	Vi.
Kas, Arnold Samuel	Md.	A.B. 1956, Wayne State University	
Kaschakoff, Devora Helen	D.C.	Kearney, Anna Mary	
Kase, Francis Joseph	D.C.	B.S. in Ed. 1950, Vermont State Teachers College, Castleton	Tenn.
LL.D. 1944, Charles University, Czechoslovakia		A.M. in Ed. 1955, The George Washington University	
A.M. 1945, Free School of Political Science, Czechoslovakia		Kearney, Carolyn Elizabeth	Md.
Kashwa, Herbert Ross	Hawaii	A.B. 1955, Centre College	Va.
B.S. 1950, University of Hawaii		Kearney, Molly Williams	
M.S. 1954, The George Washington University		Kearney, Richard Vincent	Puerto Rico
Kasins, Thomas Weber	Md.	B.B.A. 1951, Manhattan College	
Kasparek, Ronald Lewis	D.C.	LL.B. 1954, Fordham University	
Kass, Martin Bernard	Va.	Kearney, Sofia	
Kasul, Simon	Md.	B.A. in Letters 1951, University of Barcelona, Spain	W. Va.
Kastorek, Michael Thomas		Kearns, Jack Donald	Md.
A.B. 1956, The George Washington University		Kearns, Margaret Francisco	Ohio
Kasten, Sherry Eve	D.C.	Keating, John Lawrence	Pa.
Katek, Anne Stuch	Md.	A.B. 1955, Boston College	
A.B. 1951, University of Illinois		Keating, Richard Clark	D.C.
Katavoutis, James	D.C.	Keating, Robert Brendon	Pa.
B.C.E. 1954, The George Washington University		B.S. 1946, U. S. Naval Academy	
Katz, Blaine Kenneth	Md.	Keaton, Bill Leon	
Katz, David	Pa.	Keck, James William	
Katz, Howard	Va.	B.S. in Ed. 1948, Temple University	N.Y.
A.B. 1955, New York University		A.M. in Ed. 1951, The George Washington University	D.C.
Katz, Letty	Md.	Keefe, Lawrence Alexander	
Katz, Robert	D.C.	B.S. in C.E. 1954, Tufts University	Mass.
Katz, Sylvan I.	D.C.	Keefe, Robert Michael	W. Va.
B.S. 1945, University of Maryland		A.B. 1954, University of Maryland	
Katten, Howard Maryon	Md.	Keefe, Frank L.	
B.S. 1956, Johns Hopkins University		A.P. 1955, Washington and Jefferson University	Ala.
M.S. 1958, The George Washington University		Keefe, Louis Joseph	Pa.
Katman, Marlene	D.C.	Keefe, Stephen Daniel	Pa.
Kaufman, Alan Lloyd	Va.	Keefe, Mary Florence	D.C.
Kaufman, Barry Melvyn	N.Y.	Keefe, John Paul	Pa.
B.S. 1948, University of Wisconsin		Keefe, Robert Joseph	W. Va.
Kaufman, William Casper	Va.	Keefe, William Lyndon	
B.S. 1943, University of South Carolina		Keefe, Ronald Lewis	
Kaufmann, Horace Joseph	Va.	Keefe, Jerry Paul	
Kaufmann, John Peter	D.C.	A.B. 1950, Maryland College	
Kauker, Michael	D.C.	Keene, Barbara Lee	
Kaul, Donald Allen	Ohio	Keene, Ann Jackson	
B.M.E. 1955, Ohio State University		Keene, Leonard George	N.Y.
Kay, Alan	Va.	Keene, Charlotte	Pa.
A.B. 1948, The George Washington University		Keene, John David	Pa.
Kay, Anne J.	D.C.	Keene, Raymond Michael	Pa.
A.B. 1948, Howard University		B.S. 1950, Western Lutheran College	
Kay, Helen Marie	D.C.	Keene, Charles David	Va.
Kay, Joseph	Md.	Keene, Joseph David	W. Va.
B.S. 1956, American University		A.B. 1953, The George Washington University	
Kayashit, Nanda Augusta	Va.	Keene, Nancy Hanks	
Kaye, Harry	D.C.	Keene, Prof. A. van	Ala.
B.S. in I.E. 1956, Lowell Technological Institute		B.S. in C.E. 1957, University of Washington	Pa.
Kaye, Robert Atroph	N.D.	Keene, Catherine Emma H.	
A.B. in Const. 1948, A.M. in Const. 1950, The George Washington University		A.B. 1954, University of the South	
Kaye, Robert M. Kenzie	Va.	Keene, Helen Under	
Kaye, Ronald Harriet	N.Y.	A.B. 1944, Birmingham Southern University	
		Keene, James	
		Keene, Robert Milton	
		Keene, Michael George	
		B.S. 1945, Massachusetts Institute of Technology	

Students Registered

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Keenan, Gabor Joseph	Va	Kerpton, James Stephen	Ohio
Keenan, Edward Michael	D C	Kerston, Arthur James	D C
B.S. 1940, University of Maryland		Kernan, Louis Kerney	Md
Keene, Joseph H. Hart	D C	A.B. 1924, University of Illinois	
Keene, Eugene Robinson	D C	A.M. 1926, Columbia University	
Keene, Walter Bradley	Va	Kernick, Monte Hammond	Va
B.S. 1942, U.S. Naval Academy		Kerns, LaMar L.	D C
Keene, James		Kerry, Bertha W. Lush	Md
Keene, Frank		Kerns, Charles Bruce	Va
Keene, John		B.S. 1903, Sweetwater College	
Keene, John		Kerns, Francis Herbert	Va
Keene, John		A.B. 1938, Southern Methodist University	
Keene, John		Kerns, Jerome Michael	Ming.
Keene, John		Kerns, Mary Eugene	N C
Keene, John		A.B. 1932, University of North Carolina	
Keene, John		Kerns, Richard Craig	D C
Keene, John		Kerns, Richard Craig	D C
Keene, John		B.S. 1943, D.C. Teachers College	
Keene, John		Kerns, Richard	D C
Keene, John		Kerns, Richard	D C
Keene, John		B.S. 1945, U.S. Naval Academy	
Keene, John		Kerns, Arthur Leslie	Md
Keene, John		A.B. 1944, New York University	
Keene, John		Kerns, Betty Jane	Va
Keene, John		A.B. 1946, The George Washington University	
Keene, John		A.M. 1947, University of Illinois	
Keene, John		Kerns, George Richard	Ill
Keene, John		Ph.D. 1948, University of Chicago	
Keene, John		A.B. 1949, University of Illinois	
Keene, John		M.P.A. 1949, Harvard University	
Keene, John		Kerns, Helen Marie	Md
Keene, John		Kerns, Joseph Ernest	Va
Keene, John		B.S. 1946, University of Massachusetts	
Keene, John		Kerns, Charles Robert, Jr.	Ohio
Keene, John		B.S. 1947, Kent State University	
Keene, John		Kerns, Melba Marie Forester	D C
Keene, John		Kerns, Charles Henry	Va
Keene, John		Kerns, Ed Morris	D C
Keene, John		Kerns, James Eugene Goulet	D C
Keene, John		Kerns, Richard Charles	Md
Keene, John		Kerns, Hugh Herbert	Va
Keene, John		Kerns, Charles Ernest II	D C
Keene, John		A.B. 1946, Pomona University	D C
Keene, John		Kerns, Leo	Ill
Keene, John		B.S. 1947, Roosevelt College	
Keene, John		Kerns, Edward Henry, Jr.	Md
Keene, John		B.S. 1947, University of Rhode Island	
Keene, John		Kerns, Edward Henry	Md
Keene, John		Kerns, Patricia Clare	N Y
Keene, John		Kerns, Anthony Mark	Md
Keene, John		Kerns, Gary Woodward	D C
Keene, John		Kerns, James	Md
Keene, John		B.S. 1949, Kentucky College	
Keene, John		M.S. 1951, Ohio State University	
Keene, John		Kerns, Richard Newton	Md
Keene, John		B.S. 1949, Rockford College	
Keene, John		M.S. 1951, St. Louis University	
Keene, John		Kerns, Thomas William	Va
Keene, John		B.S. 1944, Virginia University	
Keene, John		Kerns, Matthew James	D C
Keene, John		B.S. 1948, M.S. 1947, University of Missouri	
Keene, John		Kerns, Gertrude W. 1943	Va
Keene, John		A.B. 1947, Lyonsburg College	
Keene, John		Kerns, Jean Louise, Jr.	Ind
Keene, John		B.B.A. 1944, University of Pittsburgh	
Keene, John		Kerns, Sasha Zaid	D C

Kerr, Thomas James	Va	Kierue, Robert Richard	Va
A.B. 1957, University of Washington		B.S. 1950, Bucknell University	
Kerschbaum, Gretchen	Md	A.M. in Govt. 1958, The George Washington University	
Kersey, Carole Scott	Va	Kierman, Jean Carmine	
Kersey, Joseph Alvan	Va	A.B. 1958, The George Washington University	
B.E.E. 1943, Georgia Institute of Technology		Kierman, Paul Barrett	
Kertzman, Jean	Md	A.B. 1958, Merrimack College	
Kerwin, Charles William	Md	Kierman, Thomas Joseph	
Kerwin, Timothy Daniel	Md	B.S. 1958, Manhattan College	
B.S. 1950, Randolph-Macon College		Korasz, Julie	
Kesari, Samit	Thailand	A.B. 1958, Oberlin College	
Kesner, Leo Glendon	W Va	Kirby, John Richard	
A.B. 1950, Shepherd State College		A.B. 1957, Indiana State Teachers College	
A.M. in Ed. 1957, The George Washington University		Kirby, Laura Woodborn	
Kessler, Dan Peck	W Va	Kirby, H. A. L.	
Kessler, Frederick Joseph	D.C.	B.S. in Agr. Eng. 1957, Louisiana State University	
B.S. 1950, Boston College		Kirby, James Edward	
Kessler, Helen Jeanette	Fla	Kirby, Harold Louis	
B.A.B. 1954, University of Florida		B.S. 1943, Northwestern Louisiana Institute	
Kessler, Isadore	D.C.	Kirby, Gordon Guthrie	
Kessler, Melva Ann	D.C.	A.B. 1947, University of Pennsylvania	
B.S. 1957, D.C. Teachers College		Kirby, Richard Herman, Jr.	
Keston, Jane Ellen	N.Y.	A.B. 1958, Duke University	
Kester, Sanford Miller	Md	Kirby, Jim Rusk	
A.B. 1950, University of Michigan		Kirby, Thomas Hyle	
Kester, James Edwin	W Va	Kirby, Margaret Sandra	
B.S. in E.E. 1956, Virginia Polytechnic Institute		A.B. 1958, College of Notre Dame of Maryland	
Ketchum, John Lyden	Va	Kim, Chung Hoon	
A.B. in Govt. 1958, The George Washington University		A.B. in Govt. 1958, The George Washington University	
Kotel, Louis Maryanna	Netherlands	Kim, DeYoung	
Kottmann, John F. Brigham	Va	Kim, Eun Sukang	
Kovari, Lawrence Eugene	D.C.	Kim, Hyoung Guk	
Kovari, Shirley Jeanette	D.C.	Kim, Kyoung Woun	
Kevorkian, Arlene Marian	Md	Kim, Mary Hyunsok	
Key, Bertha Williams		B.S. 1958, The George Washington University	
B.S. 1947, Ohio University		Kim, Rosalie	
A.M. 1951, New York University		Kim, Suk Joo	
Key, Kay Frances	Va	Ed B. 1955, Seoul National University, Korea	
Key, Marguerite	Va	Kim, Thang Woo	
B.S. in Ed. 1944, Northern Illinois State Teachers College		Kim, Tong In	
M.P.H. 1946, University of Michigan		A.B. 1958, College of Empress, Korea	
Keya, Florence Patsy Francis	D.C.	Kim, Woon Dan	
B.S. 1950, D.C. Teachers College		A.B. 1958, Aoyama Gakuin College, Japan	
Keyser, Richard Morris	Va	Kim, Woon Gie	
A.B. 1954, The George Washington University		A.B. 1950, Korea University	
Khan, Muhammad Salim	Pakistan	Kim, Yong Gi	
A.B. 1947, University of Panjab, Pakistan		Kim, Yoon Karen	
Kilgus, Victor Kenneth	India	Kim, Lewis Howard	
Kilgus, Bernard, Samuel	Lebanon	Kim, J. J. Irene Wolfe	
Kilgus, Carl Mason	Va	Kimmel, Norman Therese	
Kilgus, Alva Thomas	Iran	Kimura, Naoko	
A.B. 1954, San Francisco State College		Kimura, Naoko R. Rollee	
Kila, Anthony Joseph	Va	B.G.S. 1951, Louisiana State University	
A.B. 1950, University of Southern California		Kimber, Shirley Ann	
Kill, Charles Michael	Ala	Kirby, Robert Samuel Anthony	
A.B. 1957, Virginia University		A.B. 1951, Brown University	
Killa, Bernard George	Pa	Kirby, Stephen	
B.S. 1948, Pennsylvania State University		Kirby, Charles Wesley	
Kilmer, Julian Carlton	W Va	A.B. 1957, Washington and Lee University	
A.B. 1951, Shepherd State College		King, Donald C. H.	
A.M. in Ed. 1957, The George Washington University			
Killy, Johna Marie	Conn		
A.B. 1950, Albertus Magnus College			

Students Registered

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Students Registered			631
Kirk, Edwin Eugene			
Kirk, E. F. 1955, Alabama Polytechnic Institute	Va.	Kirk, Doris Colleen	
Kirk, Elizabeth Shelton		Kirk, Richard Benedict	Va. Conn.
Kirk, E. F. 1955, Alabama Polytechnic Institute	D.C.	B.S. in M.E. 1957, University of Bridgeport	
Kirk, George Howard	Va.	Kirk, Sharon	Md.
Kirk, George Marshall		A.B. 1961, Monmouth College	
Kirk, George William	Fla.	Kirkbride, Virginia Randolph	Nebr.
Kirk, George William	Va.	B.S. 1941, A.M. 1942, University of Nebraska	
Kirk, George William		Kirkland, Harvey District	Ont.
Kirk, George William	Va.	Kirker, Clarence Archibald, Jr.	Md.
Kirk, George William		Kirkland, Arthur William	Md.
Kirk, George William	Va.	A.B. 1962, West Liberty State College	
Kirk, George William		Kirkland, Andrew Spencer	D.C.
Kirk, George William	Md.	B.S. 1941, Auburn Agricultural and Mechanical College	
Kirk, George William		Kirkland, Helen Lucy	Md.
Kirk, George William	D.C.	A.B. 1941, Howard University	
Kirk, George William	Ala.	A.M. 1941, New York University	
Kirk, George William		Kirkland, Margaret Knauer	D.C.
Kirk, George William	Va.	Kirkland, Robert Carey	Va.
Kirk, George William		Kirkpatrick, Howard, Laureate	Md.
Kirk, George William	D.C.	Kirk, Ann Patricia	D.C.
Kirk, George William	Calif.	Kirk, Marina Suzanne	D.C.
Kirk, George William		Kirk, Robert Newton	Md.
Kirk, George William		B.S. 1942, University of Maryland	
Kirk, George William		Kirkpatrick, Anne Marie	D.C.
Kirk, George William		Kirkpatrick, James Joseph III	Md.
Kirk, George William		Kirkpatrick, Fred Albert	Conn.
Kirk, George William		Kirkpatrick, Margaret F.	Md.
Kirk, George William		Kirkpatrick, Thomas	N.J.
Kirk, George William		A.B. 1942, Princeton University	
Kirk, George William		A.M. 1942, University of California	
Kirk, George William		Kirkpatrick, Henry Norman	Hawaii
Kirk, George William		B.F.A. 1942, University of Hawaii	
Kirk, George William		Klass, Bruce Gregory	Va.
Kirk, George William		B.S. in M.E., B.S. in B.A. 1946, University of Colorado	
Kirk, George William		Klappa, Pete Patrick	Pa.
Kirk, George William		B.S. 1941, University of Scranton	
Kirk, George William		Klassen, Harvey James	D.C.
Kirk, George William		Klatsky, Allen Walter	N.Y.
Kirk, George William		A.B. 1952, Yale University	
Kirk, George William		Klay, Charles Arthur	D.C.
Kirk, George William		B.S. 1952, Johns Hopkins University	
Kirk, George William		Kline, Stefan Jay	Md.
Kirk, George William		A.B. 1941, Cleveland University	
Kirk, George William		Klown, Marilyn Ruth	D.C.
Kirk, George William		Klown, Thomas Anthony	Md.
Kirk, George William		B.S. in E.E. 1941, Pennsylvania State University	
Kirk, George William		Klown, Wayne Warren	N.Y.
Kirk, George William		B.S. in M.E. 1946, University of Maryland	
Kirk, George William		Klein, Ernest Joseph	D.C.
Kirk, George William		Klein, Kenneth	Va.
Kirk, George William		Klein, Lawrence	D.C.
Kirk, George William		Klein, John Francis	Md.
Kirk, George William		Kline, Marjorie	Utah
Kirk, George William		Kline, Eugene Leslie	D.C.
Kirk, George William		A.B. 1941, Monmouth College	
Kirk, George William		Kline, Robert Paul	N.D.
Kirk, George William		B.S. in M.E. 1941, University of North Dakota	
Kirk, George William		Kline, Allen Joseph	Va.
Kirk, George William		Kline, David N. Jr.	D.C.
Kirk, George William		B.S. in E.E. 1941, The Citadel	
Kirk, George William		Kline, Barbara Knapp	D.C.
Kirk, George William		Kline, Edna Mae	Md.
Kirk, George William		A.B. 1941, Colorado State College	

Kline, Edward Samuel					
A.B. 1942, University of Pennsylvania					
M.S. 1953, The George Washington University					
Kline, James Frederick					
B.S. in F.E. 1951, The George Washington University					
Kline, Peter Lee					
A.B. 1953, Adelphi College					
Klineberg, James Robert					
A.B., A.M. 1955, Johns Hopkins University					
Kline, John Robert					
B.S. 1953, New York State Maritime College					
Kline, John Kenneth					
Knechtges, John James					
B.S. 1953, University of Maryland					
Knechtges, Frances Linda					
Knight, Larry Dean					
A.B. 1952, Pratt, Kirt and Marshall College					
Klink, Stanley Joseph Jr.					
Knappe, Ronald					
B.S. 1957, U.S. Naval Academy					
Knight, Sister Virginia					
Knox, Marie Stuart					
A.B. 1923, Sweet Briar College					
A.M. 1926, Columbia University					
Kopper, Frederick Herman					
Kota, Anthony					
A.B. 1955, University of Maryland					
Kox, John Peter					
B.S. 1957, Michigan College of Mining and Forestry					
Krivos, Edward Andrew					
B.S. in F.E. 1956, Northwestern University					
Knapp, Leon Estelle					
B.S. 1957, Gustavus Adolphus College					
Knapp, Marian Eleanor					
Knee, Ross Elaine					
A.B. 1956, The George Washington University					
Kneeland, Lillian					
Knight, Carol Lynn					
A.B. 1958, DePaul University					
Knight, Chester Raymond					
B.S. 1951, University of Utah					
Knight, Florence Elmer					
A.B. 1946, University of North Carolina					
Knight, Leland Quinn					
Knight, Helen Elizabeth					
Knight, Anne Ann					
Knight, Samuel Ralph					
Knight, Margaret Helen					
Kohl, Edwin					
A.B. 1951, New York University					
Kohn, Norman John					
Kohn, Ruth Hugh					
Kohn, Albert Lee					
Kohn, Joseph Louis					
A.B. 1951, D.C. Teachers College					
Kohn, Philip King					
A.B. in F.E. 1956, A.M. 1957, The George Washington University					
Kohn, Robert Theodore					
Kohn, Patricia Winifred					
B.S. 1953, Georgetown University					
Konow, Thomas Borg					
Konow, Elizabeth Leah					
Koby, Jayne Hoffman					
Koch, Jeanette Adeline					
Koch, John Arthur					
B.L.E. 1954, Ohio State University					
Koch, Nancy Virginia					
Kocher, James Hugh					
A.B. 1955, University of Idaho					
Kocher, John					
Kocher, Dorothy Elizabeth					
Kocher, Robert Henry					
Kocher, Charles Lewis					
B.S. in F.E. 1952, Pennsylvania Military College					
Kocher, Robert Oswald					
Kocher, Martin Andrew					
B.S. 1953, Pennsylvania University					
Kocher, John Henry					
B.S. 1951, New York University					
Kocher, Ronald Louis					
Kocher, John Alfred					
B.S. in F.E. 1956, University of Dayton					
Kocher, Robert Walter					
B.S. 1951, University of Maryland					
A.B. 1957, The George Washington University					
Kocher, Nancy Marie					
Kocher, Robert Anthony					
Kocher, Martin					
Kocher, John					
Kocher, Donald Joseph					
A.B. 1955, Ohio State University					
Kocher, Robert Louis					
Kocher, James					
A.B. 1951, Adelphi College					
Kocher, Louis A.					
A.B. 1955, A.M. 1957, Temple University					
Kocher, David Allen					
Kocher, Ross Louis					
A.B. 1954, B.S. 1958, The George Washington University					
Kocher, William Maxine					
Kocher, Joseph Franklin					
Kocher, Howard					
Kocher, Arthur Eugene					
Kocher, Frank Louis					
Kocher, Carol Anne					
Kocher, Lloyd George					
Kocher, Nick Alexander					
A.B. 1951, Marshall College					
A.M. 1955, The George Washington University					
Kocher, Charles					
A.B. 1955, New York University					
Kocher, David					
Kocher, Alexander Beck					
Kocher, Robert Lee					
Kocher, Dean Franklin Weidner					
Kocher, Maria					
Kocher, David Andrew					
A.B. 1955, The George Washington University					
Kocher, Hilda Elizabeth					
A.B. 1955, Iowa State College					
Kocher, Nancy Jean					
Kocher, Alfred Carl Hermann					
Kocher, Robert					
A.B. 1951, Brooklyn College					
B.L.E. 1955, The George Washington University					
Kocher, Mary Leah					
Kocher, Nicholas Konstantinos					
Kocher, Stephen John					

Students Registered

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Kaplan, Nicholas Charles	D.C.	Kraft, Henrietta Evans	Md
Kaplan, Robert Ronald	D.C.	Kraft, John Frederick	Md
Kaplan, Stanley W.	Va	A.B. 1944, The George Washington University	
Kaplan, Thomas	D.C.	Krahling, Patricia Ann	D.C.
Kaplan, James Martin	D.C.	Krahling, Albert	D.C.
Kaplan, Joseph	N.Y.	Kramer, Celia Anne	Va
Kaplan, Joseph	N.Y.	Kramer, Robert Shubert	Md
Kaplan, Joseph David	Md	Kramer, Joan Ann	N.Y.
Kaplan, Joseph David	Md	Kramer, Margaret Louise	Md
Kaplan, Joseph David	Md	Kramer, Oscar Milton	D.C.
Kaplan, Joseph David	Md	Kramer, Robert	Va
Kaplan, Joseph David	Md	Kramer, James David	Md
Kaplan, Joseph David	Md	B.S. 1944, American University	
Kaplan, Joseph David	Md	A.M. 1944, University of Maryland	
Kaplan, Joseph David	Md	Kramlich, Ronald Joseph	D.C.
Kaplan, Joseph David	Md	B.S. 1944, The George Washington University	
Kaplan, Joseph David	Md	Kramer, Marvin Jerome	D.C.
Kaplan, Joseph David	Md	Kramlich, Denis	La
Kaplan, Joseph David	Md	L.L.B. 1944, Louisiana State University	
Kaplan, Joseph David	Md	and Agricultural and Mechanical College	
Kaplan, Joseph David	Md	Kramer, James Frederick	D.C.
Kaplan, Joseph David	Md	A.B. 1944, The George Washington University	
Kaplan, Joseph David	Md	Kramer, Frederick Joseph	Md
Kaplan, Joseph David	Md	Kramer, Robert Warren	Md
Kaplan, Joseph David	Md	B.L.E. 1944, Catholic College of Tennessee	
Kaplan, Joseph David	Md	Kramer, Stephen Victor	N.Y.
Kaplan, Joseph David	Md	A.B. 1944, The George Washington University	
Kaplan, Joseph David	Md	Kramer, Arnold James	Md
Kaplan, Joseph David	Md	B.S. 1944, Michigan State University	
Kaplan, Joseph David	Md	University of Agriculture and Applied Sciences	
Kaplan, Joseph David	Md	Kramer, Stephen George	D.C.
Kaplan, Joseph David	Md	Kramer, Francis Lee Brock	Va
Kaplan, Joseph David	Md	Kramer, Joseph William	Il
Kaplan, Joseph David	Md	B.S. 1944, Georgetown University	
Kaplan, Joseph David	Md	Kravich, John Joseph	D.C.
Kaplan, Joseph David	Md	Kramer, Kathryn Frances	D.C.
Kaplan, Joseph David	Md	A.B. 1944, University of Michigan	
Kaplan, Joseph David	Md	Kramer, Marie	N.Y.
Kaplan, Joseph David	Md	B.S. 1944, Cornell University	
Kaplan, Joseph David	Md	Kramer, Richard Leon	Md
Kaplan, Joseph David	Md	A.B. 1944, Johns Hopkins University	
Kaplan, Joseph David	Md	Krebs, Arthur Henry	Md
Kaplan, Joseph David	Md	B.S. 1944, Loyola College	
Kaplan, Joseph David	Md	Krebs, Joseph Ann	Md
Kaplan, Joseph David	Md	Kreider, Margaret Martha	Tenn
Kaplan, Joseph David	Md	Kreider, Robert Dean	Va
Kaplan, Joseph David	Md	Kramer, Joseph Ann	Md
Kaplan, Joseph David	Md	B.S. 1944, D.C. Teachers College	
Kaplan, Joseph David	Md	Kreider, Louis	Md
Kaplan, Joseph David	Md	A.B. 1944, Indiana University	
Kaplan, Joseph David	Md	Krell, Cassius Earl	Md
Kaplan, Joseph David	Md	A.B. 1944, College of Notre Dame of Maryland	
Kaplan, Joseph David	Md	Kreider, Joseph Haskel	Md
Kaplan, Joseph David	Md	B.S. 1944, College of the City of New York	
Kaplan, Joseph David	Md	Kreider, Herbert John	Va
Kaplan, Joseph David	Md	Kreider, Joseph	Pa
Kaplan, Joseph David	Md	Kreider, Warren Jerome	D.C.
Kaplan, Joseph David	Md	Kreider, George Joseph, Jr.	Pa
Kaplan, Joseph David	Md	Kreider, Charles	Md
Kaplan, Joseph David	Md	A.B. 1944, Pennsylvania State University	
Kaplan, Joseph David	Md	A.M. 1944, Pennsylvania State University	
Kaplan, Joseph David	Md	Kreider, Sperry Louis	D.C.

Krishna, Bharat Bhushan B.S. 1953, University of Agra, India	India	Kulberg, Raoul A.B. 1942, Pomona College	D.C.
Kroeger, Henning	D.C.	Kuller, Lewis Henry A.B. 1944, Hamilton College	D.C.
Kroger, Irene Aldona B.S. 1948, The George Washington University	D.C.	Kundel, Lois Ann	N.Y.
Kroger, Rita Maria Kroger, Arthur Stella A.B. 1963, The George Washington University	Md.	Kundin, Jack Earl Kunze, Norman Nathan B.S. & L.E. 1947, Diesel Institute of Technology	Pa.
Krotchik, Michael	Md.	Kuttle, Fred Stanley, Jr. Kutler, Frank Albert	Md.
Kroe, Joel Thomas A.B. 1947, Southern Methodist University	Texas	Kutzman, Ronald G. B.S. 1945, Brooklyn College	N.Y.
Kroger, Gerald Bradley A.B. 1947, University of Minnesota	Minn.	M.S. 1947, The George Washington University	Pa.
Krohn, Donald Eugene	Oreg.	Kwinn, Ralph Edward Kemper, C. Albert III A.B. 1948, Johns Hopkins University	D.C.
Krhn, Jerry A.B. 1948, Hood College	N.J.	Kupersmith, Lester Rochelle Kusinski, Charles Charles B.S. & M.F. 1944, A. Bonova College	Pa.
Kradtke, Jeanne Dean Kradt, Sarah Jane	Md.	Kutrop, Robert Arthur Kurel, Donald Meredith A.B. 1948, Dartmouth College	Pa.
Kraft, William Stanley A.B. 1948, Bowling Green State University	Ohio	Kurtz, Richard Everett B.S. 1947, Lehigh University	Va.
Kropacz, Norman Andrew Krope, David Arthur B.S. 1946, Illinois Institute of Technology	Pa.	Kurtz, William Louis A.B. & M.F. 1947, The George Washington University	Md.
Kroger, Thomas Earl	Va.	Kutzman, Caroline Habitzel B.S. 1944, University of Arizona	Md.
Kroust, Jerry Emile III	D.C.	Kutzman, David Robert Kuhl, Edmund J.	Va.
Krueger, Donald Allan Krueger, Vernon LeRoy Krug, Diana Joyce	Minn.	Kutner, Jessica Vail B.S. 1947, Cornell University	Pa.
Kruger, Frances Lucretia Kruger, Samuel R. Krug, Walter B.S. & M.F. 1946, Lafayette College	Pa.	Kutner, Harold Andrew A.B. 1947, Columbia University	Pa.
Krud, Peter B.I. 1947, Catholic University of America	D.C.	Kutner, Robert William A.B. 1947, University of Washington	Pa.
Kroneberg, Paul Conrad B.S. & B.A. 1947, University of Missouri	Va.	Kutler, Orlan Deme B.S. & M.F. 1947, Robert College Turkey	Va.
Kropp, Estera	D.C.	Kutler, Robert Warren Kutler, Michael Joseph B.S. 1947, New York University	Va.
Kroger, Raymond Vincent B.S. & B.A. 1947, University of Scranton B.S. & T.E. 1947, Pennsylvania State University	Md.	Kutner, Leon R. Brown Kutner, Paul W. A.B. 1947, Swarthmore College	Va.
Ku, Hsue Hsiang B.S. & C.E. 1940, M.S.E. 1941, Purdue University	D.C.	A.M. 1946, Yale University Kwan, Ernest L. King A.B. 1947, University of Washington	Va.
Kuback, Thomas Leo B.M.E. 1944, General Motors Institute	Md.	Kwan, Genevieve Alida Kwak, Sue Kwan, Peter Linn B.S. 1948, The George Washington University	Pa.
Kubas, Robert Joseph B.S. 1944, North Dakota State College	D.C.	Kwan, Peter Linn Kwan, Peter Linn A.B. 1948, The George Washington University	Pa.
Kubik, Shirley Kuch, Bailin Louis B.S. 1943, Brooklyn Polytechnic Institute	N.Y.	Kwan, Peter Linn Kwan, Peter Linn A.B. 1948, The George Washington University	Pa.
Kuchinsky, Victoria Wilhelmina Kuendel, Horst Joseph Kugler, William Austin A.B. 1947, Western University A.M. 1947, Columbia University	D.C.	Kwan, Peter Linn Kwan, Peter Linn A.B. 1948, The George Washington University	Pa.
Kuhl, Lester Eugene Kuhlman, Ana Maria A.B. 1948, Washington University	N.J.	Kwan, Peter Linn Kwan, Peter Linn A.B. 1948, The George Washington University	Pa.
Kuhn, Jacqueline Susong B.S. 1940, West Virginia University	Va.	Kwan, Peter Linn Kwan, Peter Linn A.B. 1948, The George Washington University	Pa.
Kuhn, Jeannette Kuhn, Lucille Ross Kukan, Salem Salah L.L.B. 1947, University of Cairo	D.C.	Kwan, Peter Linn Kwan, Peter Linn A.B. 1948, The George Washington University	Pa.
Kukoy, Juliana Elizabeth Kukucs, Karl A.B. 1948, The George Washington University	Va.	Kwan, Peter Linn Kwan, Peter Linn A.B. 1948, The George Washington University	Pa.
		Kwan, Peter Linn Kwan, Peter Linn A.B. 1948, The George Washington University	Pa.

Lanham, Peter Benedier III B.S. in M.E. 1957, Rose Polytechnic Institute	Ky	Latimer, Rhoda Carroll A.B. in Ed. 1946, The George Washington University	Al
Lanham, Richard Alan A.B. 1936, Yale University	Va	Latimer, Russell Gordon A.B. 1928, The George Washington University	Al
Lanier, Billy Ray	N.C.	Latta, Mary	Al
Lanier, Carolyn Braund	D.C.	Lattimore, Ruth Savoy B.S. 1948, The George Washington University	Al
Lanier, Jack Ormond B.S. 1955, North Carolina Agricultural and Technical College	MD	Latta, Adolph, Jr. Law, Alan William	N
Lannon, Edwin Raymond A.B. 1948, Ed.M. 1950, Tufts University	Va	A.B. 1948, American University	N
Lansner, Olga Mary	Va	Lewis, Robert Gould A.B. 1942, Massachusetts University of Wellesley	Al
Lansner, Thelma Marina	MD	L.L.B. 1944, University of Kansas	Al
Lantz, Robert Lester	MD	Lewis, Edmund A.B. 1946, University of Maryland	Al
Larson, Thomas	Va	Lewis, John A.B. 1948, University of California	Al
Larson, Ann Mallabee	D.C.	Lewis, John William, Jr. A.B. 1948, University of California	Al
Larson, Thomas J. B.S. 1944, U.S. Naval Academy	Calif	Lewis, John A.B. 1941, Cornell College	Al
LaPlante, Francis Gerald	MD	Lewis, Francis John A.B. 1948, Columbia University	Al
Lapinsky, Morton Matzevitch	Va	Lewis, John William A.B. 1948, Clark University	Al
Laprade, Gertrude Cecilia A.B. in Govt. 1957, The George Washington University	Va	Laurens, Anne Perini A.B. 1944, College of Puget Sound	Al
LaPrade, John Christian B.S. 1957, New Mexico College of Agriculture and Mechanical Arts	Utah	Laurens, Vernon Joseph, Jr. Law, William Joseph, Jr.	Al
LaPrade, Russa Forte	Iowa	B.S. 1952, U.S. Naval Academy	Al
Larson, Eric Lynn B.S. 1957, Utah State University of Agriculture and Applied Science	MD	Larson, Richard Maurice Lawson, John	Al
Larke, John Sylvester	Va	Lawson, Jess Daniel Lawson, John Joseph	Al
Larson, Alvin Lee A.B. 1941, Washington College	D.C.	Lawson, John Joseph A.B. 1944, Washington College	Al
Larson, Eugene May	D.C.	Lawson, Thomas Jackson Lawson, Thomas Jackson	Al
Larson, Kenneth Reynolds	D.C.	Lawson, William Edward B.S. 1941, Mississippi State University of Agriculture and Applied Science	Al
Larson, Alvin Marie	Iowa	Lawson, Paul William B.A. 1948, New York University	Al
Larson, Lillian Jane B.S. in Ed. 1948, Catholic University of America	Va	Lawson, Mary Ann A.B. 1948, Syracuse University	Al
Larson, James Herbert	MD	Lawson, Charles R. Law, Mary Agnes	Al
Larson, Mary Ann Baxter	N.Y.	B.S. 1941, Mississippi Southern College	Al
Larson, Ann Kalaratz	D.C.	Law, Mildred Frances A.B. 1941, M.S. 1944, West Virginia University	Al
Larson, Maria Agnes A.B. in Govt. 1947, The George Washington University	Va	Lawler, Valda Christine B.S. 1948, Alabama State Teachers College, Jacksonville	Al
Larson, Albert E. B.S. 1941, M.B.A. 1944, New York University	MD	Lawless, Jack Samuel Lawless, Patricia Mary	Al
Larson, Paul Frank	N.Y.	B.S. in P.E. 1949, The George Washington University	Al
Larson, Robert Edwin	D.C.	Lawler, Thomas Joseph Lawrence, Albert Francis	Al
Larson, Sanford	Va	A.B. 1942, University of California	Al
Larson, Kenneth Blaine Gledhill B.S. 1946, Virginia Polytechnic Institute	Va	Lawrence, Charles Woodfield Lawrence, Christine Mary	Al
LaRue, Arthur John	MD	A.B. 1948, Washington College	Al
LaRue, Mary Virginia	MD	Lawrence, Myron Charles B.E.E. 1941, Pratt Institute	Al
Larkey, John William	D.C.	Lawrence, Rose Adams A.B. 1948, University of Wisconsin	Al
Larley, James Edward	Florida	Lawrenson, Raymond Miles IV	Al
Lars, Harold Arthur A.B. 1947, The George Washington University	D.C.		
Larson, Philip	MD		
Lawrence, James William	D.C.		
Lawrence, Jack	Al		
Lawson, Fred Cornelius	D.C.		
Lawson, Gertrude Margaretta	MD		
Lawson, Roney	Va		
Lawson, Jay Anthony	Al		
Lawson, Francis Manuel A.B. 1944, Indiana State Normal University			
Lawson, A.M. 1944, Clark University			

Students Registered			63
Lee, Ruth Elizabeth			
A.B. 1944, The George Washington University	D.C.	Lee, Helen Chung	China
M.B.A. 1941, McCormick Engineering School		A.B. 1944, National Central University, China	
Lee, David Herbert		Lee, James Barker	Utah
A.E. 1928, Pennsylvania College	Va	B.S. 1942, U.S. Military Academy	
Lee, Henry Paul		Lee, Kahan Eugene	Va
A.B. 1934, University of Maryland	Md	A.B. 1939, Ohio State College	
Lee, Robert A. Jr.		Lee, Kyu Myung	Korea
A.B. 1934, University of Maryland	Va	Lee, Masao Isobara	Maui
Lee, William Daniel		Lee, Martin Homer	Va
M.S. 1934, University of Missouri	Md	A.B. 1936, University of Virginia	
Lee, Robert N.		Lee, Mecha Isao	J.C.
Lee, John Lewis		Lee, Mildred Van Horn	W.Va.
Lee, Leo Merrill		Lee, Sam Ki	Korea
Lee, William Lawrence		A.B. 1932, Seoul National University	
E.S. 1938, Rochester Polytechnic Institute	W.Va		
Lee, Harold Leon		Lee, Namu Aon	Pa
A.B. 1934, Maryland State University	Va	Lee, Richard Earl	Ga
Lee, Philip		Lee, Richard Glenn	La
Lee, Joseph		Lee, Richard Wren Han	D.C.
Lee, Katherine Jeanne		B.S. 1944, National Chiao Tung University	
Lee, Stephen		Lee, Virginia Louise	Mass
Lee, George Kent		A.B. 1937, The George Washington University	
Lee, Perry Jennings, Jr.		Lee, Wally	D.C.
Lee, Francis Marion		Lee, Wendell Hanna	Va
A.B. 1934, University of California	Va	Leeman, Henry Samuel	Pa
Lee, Helen Barker		A.B. 1938, LL.B. 1944, Dickinson College	
A.B. 1934, Marshall College	Md	Lewis, Kenneth	D.C.
Lee, James B.		Lewis, Lawrence Russell	D.C.
Lee, William Alexander		Lewis, Paul Duane	D.C.
Lee, Robert Potts		B.S. 1944, West Virginia State University of Agriculture and Applied Science	
A.B. 1934, University of Virginia	Md	Leopold, Louis Louis, Jr.	Va
Lee, Edward Wayne, Jr.		Leopold, Robert John	H.C.
A.B. 1934, College of the Pacific		Leopold, Robert Howard	Calif.
Lee, Zigmund Moses		B.S. 1944, Yale University	
B.S. 1934, M.D. 1944, Pennsylvania University	D.C.	Lee, Henry Vincent Thomas	D.C.
Lee, Lora Marie		B.S. 1944, M.A. 1946, University of Wisconsin, Study Africa	
A.B. 1934, Kentucky State College	D.C.	Leffler, Mary George	Va
Lee, Henry Marie		Leffler, Rudolph Lee	N.Y.
Lee, Louis		Leffler, Stuart George	Va
Lee, William Virginia		Leffler, Walter Randolph, Jr.	Va
Lee, Mary Jane		Leffler, Philip Walter	D.C.
Lee, Amy Lou		Leffler, Agnes Suzanne	Va
Lee, Lillian Columbus		A.B. 1944, University of Virginia	
E.E. 1934, North Carolina State College	Va	A.M. 1944, Indiana University	
Lee, Lora Lillian, Jr.		Lehman, Rora	Va
B.S. 1944, C.E. 1944, Alabama Polytechnic Institute	Va	Lehman, Richard Lawrence	N.Y.
Lee, Robert Richard		Lehman, Norma	Md
Lee, Arthur Wilkins		B.S. 1944, University of Missouri	
A.B. 1934, University of Virginia	Va	Lehman, Lora Flora	Md
Lee, Kenneth		B.S. 1944, Ohio State University	
A.B. 1934, Cornell University	N.Y.	Lehr, William, Jr.	Md
Lee, George		Lehr, Howard	N.J.
A.B. 1934, Cornell University	N.Y.	Lehman, George Joseph	Md
Lee, John		B.S. 1944, College of the City of New York	
A.B. 1934, Cornell University	N.Y.	Lehman, Saul Eugene	Va
Lee, John		Lehr, Frederick	Va
A.B. 1934, Cornell University	N.Y.	B.S. 1944, Georgetown University	
Lee, John		A.B. 1944, Virginia University	
A.B. 1934, Cornell University	N.Y.	Lehman, Henry Moore	Va
Lee, John		B.S. 1944, Southern College	
A.B. 1934, Cornell University	N.Y.	A.M. 1944, Cornell University	
Lee, John		Lehr, Homer George	Va
A.B. 1934, Cornell University	N.Y.	Lehman, Howard Naves	Md
Lee, John			

Leiner, Charles Philip	Md.	Leslie, Ruth, Clyde	
B.S. in M.E. 1951, San Diego State College		Levin, Grace Friedman	
Leiner, Henrietta Chatares	D.C.	B.S. 1925, College of the City of New York	
A.B. 1914, Hunter College		Levin, Gloria Thadler	
A.M. 1927, University of Pennsylvania		Levin, Harry Edward	
Leis, Sylvester Pyrik	Va.	B.S. 1947, University of Oregon	
B.B.A. 1926, University of Miami		Levin, James Dudley	
Leisner, David	Va.	A.B. 1947, Iowa Central State College	
A.B. 1925, Brooklyn College		Levin, Louis Rura, Jr.	
Leisner, Marjorie Tinkelman	Va.	B.S. 1931, Adelphi College	
Leitch, Hazel G.	D.C.	Leitch, James Morton	
B.S. 1918, D. C. Teachers College		B.S. 1937, Carnegie Institute of Technology	
Leisner, James Edwin	Ohio	Letour, Albert Andrew	
B.S. in E.E. 1957, Purdue University		B.S. 1911, I.M. 1922, University of Maryland	
Leisner, Alvin Eugene	W. Va.	Letour, Virginia Rose	
Leisner, Frederick Henry, Jr.	D.C.	Letour, Clara Brown	
B.S. 1912, U. S. Naval Academy		B.S. 1934, University of Idaho	
Lemke, William Philip	Ind.	Letour, Gloria Helene	
B.S. 1927, University of Maryland		Letour, Mary Harold	
Lemond, Evelyn May	Va.	B.S. 1924, University of Michigan	
B.S. 1928, University of Maryland		Levinson, Harry R.	
Lempus, Paul Stanley	Mich.	Levinson, James Alexander	
B.S. in M.E. B.S. in Eng. Adm. 1957, Michigan College of Mining and Technology		B.S. 1931, Pennsylvania State Teachers College, East Stroudsburg	
Leisner, Ronald Louis	D.C.	Levinson, Abraham	
Leisner, Kathleen Rose	Md.	B.O.E. 1916, Cooper Union	
A.B. 1938, The George Washington University		Levinson, Gary Louis	
Leisner, Karl John	Mich.	Levinson, Harry William, Jr.	
A.B. 1924, University of Notre Dame		Levinson, Robert Michael	
Leisner, John Calvin	Conn.	A.B. 1922, Harvard University	
Leisner, Harry Bryant	D.C.	Levy, Sylvia Saxon	
Leisner, Bernard Samuel	N.Y.	B.S. 1921, Vassar Polytechnic Institute	
A.B. 1931, New York University		A.M. 1927, Fordham University	
Leisner, Carl Lynn	D.C.	Levy, Burton James	
B.S. 1931, Boston University		A.B. 1924, Iowa University	
Leisner, Eugene Allen	Pa.	Levy, Robert Norman	
Leisner, Lewis Walter	P.	Levinson, Aaron M.	
Leisner, George, Jr.	D.C.	A.B. 1920, Bryn Mawr College	
Leisner, Robert Gregory	Va.	Levinson, Barbara Claudia	
B.S. in C.E. 1929, Newark College of Engineering		Levinson, Betty Goodman	
M.S. in Eng. 1927, Princeton University		A.B. 1927, University of Maryland	
Leisner, Roxane Somersan	Ind.	Levinson, Herbert	
Leisner, Gerald Anthony	Va.	B.S. 1925, Brooklyn College	
Leisner, Edmund Matamoros	D.C.	A.B. 1921, Harvard University	
Leisner, John M.	N.Y.	Levinson, Robert Stephen	
B.S. in E.E. 1928, University of Rhode Island		Levinson, Simon B.	
Leisner, Anthony Alfred		A.B. 1921, Harris Teachers College	
B.S. & C.E. 1928, Syracuse University		Levinson, David Roman	
Leisner, Charles Richard	Pa.	A.B. 1921, New York University	
B.E.E. 1927, The George Washington University		Levinson, David Julius	
Leisner, Claudia Gertrude	D.C.	A.B. 1926, Bryn Mawr College	
Leisner, Nancy Ruth	Va.	Levinson, Elmer Stora	
Leisner, Helen		B.S. 1925, U.S. Merchant Marine Academy	
B.E. 1917, Wisconsin State College		Leisner, Maurice Ann	
A.M. 1921, Columbia University	D.C.	Leisner, Martha Anne	
Leisner, Joseph Wilson	Va.	Leisner, Simon Harold	
Leisner, Roscoe Reichenstein	D.C.	Leisner, Louis Simon	
Leisner, Peter David	D.C.	A.B. 1924, The George Washington University	
Leisner, Carol Patricia	Del.	Leisner, Edward Isaac	
Leisner, Stephen Gerald	Va.	Leisner, Julius S.	
B.A. in Eng. 1924, Catholic University of America		B.S. 1921, College of the City of New York	
Leisner, David Eric	Calif.	M.S. 1927, Kansas State College	
B.S. 1919, California Polytechnic Institute		B.S. 1921, College of the City of New York	
Leisner, Edward Andrew	Va.	B.S. in Phil. 1927, Fordham University	
Leisner, John Andrew	Va.		

Linck, Raymond John	D.C.	Little, Rose Freedberg	
Lincoln, Helen Mawson	Pa.	A.B. 1921, Harvard College	
B.S. 1924, Hahnemann Medical College and Hospital		Linton, Gertrude James	Ohio
Lind, Mancel	Va.	B.S.E. 1927, University of Mississippi	
B.S. 1932, Municipal University of Omaha		Lin, Loni	Ala.
Lindell, Twyla Avonelle	Va.	Livengood, John Frederick, Jr.	Mo.
Lindsay, Sir Anne Goddard	Mass.	B.S. in B.A. 1933, University of Arkansas	
Linsde, Frances Selmer	D.C.	Lizias, Anthony	
A.B. 1941, Radcliffe College		Linsdell, Lutz Cressham	Ind.
Linsde, Richard Paul	Va.	B.S. 1932, College of William and Mary	
Linsde, Virginia Catherine	D.C.	Lloyd, Edmund Henry, Jr.	Mo.
Linsley, Carleton Jay	MD.	B.S. 1924, University of Maryland	
B.S. 1929, Iowa State College of Agriculture and Mechanic Arts		Lloyd, J. William	Ind.
Linsley, Carl B., Jr.	Va.	B.S. 1913, M.S. 1926, University of Maryland	
Linsley, Herbert Arthur	Mass.	Lloyd, Louis West	
Linsmith, Charles Hartsom	Ill.	A.B. 1925, The George Washington University	
B.S. 1916, University of Illinois		Lloyd, John Matthew, Jr.	Mo.
Linsner, Jonathan Aaron	Ga.	B.S. 1919, Kansas State University	
Linsner, Thomas Francis	Va.	Lloyd, Kathleen Mary	
Linswood, James Eric	Ill.	Lloyd, Murray Clayton	D.C.
B.S. 1926, University of Illinois		Lloyd, Thomas Henry, Jr.	
Linsworth, Regina Francis	MD.	A.B. 1914, University of North Carolina	
Linssey, Robert Gray	Va.	Lohd, Lawrence Fisher	
Linsley, Iva Glenn	Pa.	Lohd, Oswald George	
Linsley, Gertrude F.	D.C.	A.B. 1926, The George Washington University	
Linsley, Anna Noel	MD.	Lohd, James Nathan	
Lins, David Ida	D.C.	Lockard, James Edwin, Jr.	
Lins, John Edwin	Va.	A.B. 1926, Cornell University	
Lins, Thomas Lawrence	D.C.	A.M. 1928, Cornell University	
B.S. 1926, U. S. Naval Academy		Loisard, Samuel Isaac	
Lins, Richard Gray	Wis.	Loisard, Sally Kathryn	
B.S. 1924, University of Wisconsin		Loisard, Lorne Lewis	
Lins, K. Margaret	D.C.	A.B. 1926, Wisconsin	
B.S. 1927, University of Pittsburgh		Loisard, David Bruce	
Lins, Wendie Bernice	Va.	Loisard, Gussie Frances	
Lins, Ralph Isaac	D.C.	Lois, Helen Virginia	
Lins, Robert Harvey	D.C.	Lois, Richard A. Jr.	
Lins, Stanley Melvin	D.C.	Lofthill, James Howard	
A.B. 1928, Columbia University		Lofgren, Charles Gustaf	
Lipsky, Benedict Donald	MD.	Lofgren, Richard Austin, Jr.	
Lips, Edward	Va.	B.S. 1927, Mississippi State University	
B.S. 1929, Temple University		Lofgren, George Francis, Jr.	
A.M. 1912, University of Pennsylvania		B.S. 1927, M.S. 1932, University of Pittsburgh	
Lips, Anne Margaret	MD.	Lofgren, James	
Lips, Robert Allen	N.Y.	A.B. 1926, Colleton College	
Lipscomb, Katherine Johnson	D.C.	B.S. 1931, University of Missouri	
A.B. 1927, University of Michigan		Lofgren, Lora Anne	
Lipsch, Harold	D.C.	B.S. 1926, T.C. Teachers College	
Lipsch, Robert Henry	N.Y.	Lofgren, Emily Daniel	
Lipsch, David Francis	Va.	Lofgren, Ruth	
Lips, Edwin H.	D.C.	B.S. 1927, Radcliffe College	
Lips, Edwin Thomas	MD.	A.M. in Letters, 1926, The George Washington University	
Lips, Ruth Ann	N.J.	Lofgren, Samuel Andrew	
Lips, Harold, Jr.	N.C.	B.S. in B.S. 1926, Greentown University	
B.S. in M.E. 1927, Howard University		Lofgren, M.S. in Ed. 1927, New York State Teachers College, Fredonia	
Lipschitz, Gary Wynton	Ill.	Lofgren, Robert Lee	
Lipsman, Myron Albert	MD.	Lofgren, Emma Theodore	
B.S. in M.E. 1931, Purdue University		Lofgren, University of Illinois	
L.P. 1927, University of Kansas City	D.C.	Lofgren, Charles	
Lips, Dorothy Ferguson	D.C.	Lofgren, David Allen	
B.S. 1926, D.C. Teachers College		B.S. 1924, Indiana Polytechnic Institute	
Lips, Frances Fremont	Va.	Lofgren, Robert H. Jones	
Lips, Gertrude Kaye		B.S. 1924, Northwestern University	
B.E.E. 1926, Alabama Polytechnic Institute			
Lips, Lawrence Jay	Ill.		
B.S. in E.E. 1928, Purdue University			

Students Registered

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David Hamilton	MI	Love, Sylvia Mae	D.C.
Donald Castro	MI	Lovett, Michael Joseph	Va
James A. Jones	MI	B.E.E. 1955, The George Washington University	
John E. Hesteth	MI	Love, Carl Danvers	Va
John E. Hesteth	D.C.	A.B. 1955, College of Worcester	
John E. Hesteth		Love, Hans Roder	Va
John E. Hesteth	D.C.	Love, Janet William	Va
John E. Hesteth	N.Y.	B.A.E. 1954, Catholic University of America	
John E. Hesteth		Love, Jerry Leslie	Va
John E. Hesteth	MA	A.B. 1947, Bowdoin College	
John E. Hesteth	Idaho	Love, John Frederick	MI
John E. Hesteth	A	Lovings, Robert Sawyer	MI
John E. Hesteth	N	A.B. 1911, Vassar College	
John E. Hesteth	MI	M.S. 1912, University of Missouri	
John E. Hesteth	D.C.	Lovins, James W.	Pa
John E. Hesteth	Calif	Lovins, Leslie Marie	D.C.
John E. Hesteth		B.S. 1934, University of Maryland	
John E. Hesteth	Va	Lovins, Walter M.	MI
John E. Hesteth		B.S. 1945, M.S. 1948, Rutgers University	
John E. Hesteth	Va	Lovins, Lawrence Yatta	D.C.
John E. Hesteth	Pa	Lovins, Robert B.	Va
John E. Hesteth	D.C.	B.S. 1917, University of Maryland	
John E. Hesteth		Lovins, Clara Emma	Va
John E. Hesteth	N.Y.	Lovins, Kenneth Lee	Va
John E. Hesteth		Lovins, John Lawrence	N.C.
John E. Hesteth		B.C.A. 1917, North Carolina State University	
John E. Hesteth	MI	Lovins, Alan Lee	N.J.
John E. Hesteth		Lovins, Alan M. 1915	MI
John E. Hesteth	MI	B.E. 1915, University of Maryland	
John E. Hesteth	Pa	Lovins, Carlton Albert	Ky
John E. Hesteth	Id	A.B. 1914, University of Louisville	
John E. Hesteth		Lovins, Edwin L. 1911	MI
John E. Hesteth	D.C.	Lovins, Harry Martin	Calif
John E. Hesteth		Lovins, Harry Martin	D.C.
John E. Hesteth	D.C.	Lovins, Harry Martin	D.C.
John E. Hesteth		Lovins, John	D.C.
John E. Hesteth		Lovins, John	D.C.
John E. Hesteth		A.B. 1915, The George Washington University	
John E. Hesteth	Mass	Lovins, Louis Paul	MI
John E. Hesteth	D.C.	Lovins, Robert G. 1911	Va
John E. Hesteth		Lovins, William Clark	MI
John E. Hesteth		Lovins, Robert S.	N.Y.
John E. Hesteth		A.B. 1914, Pennsylvania State University	
John E. Hesteth	Pa	Lovins, Alan N. 1911	Va
John E. Hesteth		Lovins, Sidney Walter	D.C.
John E. Hesteth	W	Lovins, Robert Allen Jr.	Va
John E. Hesteth		B.E. 1915, University of Arizona	
John E. Hesteth	MI	Lovins, Philip Frank	Calif
John E. Hesteth		Lovins, George Robert	MI
John E. Hesteth		Lovins, Mary Frances	Calif
John E. Hesteth		Lovins, Philip Albert	D.C.
John E. Hesteth		Lovins, Thomas Lee	D.C.
John E. Hesteth		Lovins, Robert G. 1911	Va
John E. Hesteth		B.S. 1911, U.S. Navy Academy	
John E. Hesteth		Lovins, Thomas Edward	Id
John E. Hesteth		A.B. 1915, The George Washington University	
John E. Hesteth		Lovins, Frank G. 1911	D.C.
John E. Hesteth		A.B. 1911, Columbia University	
John E. Hesteth		Lovins, George Lawrence	Calif
John E. Hesteth		A.B. 1911, University of Arizona	
John E. Hesteth		Lovins, George Lawrence	MI
John E. Hesteth		B.S. 1911, University of Arizona	
John E. Hesteth		Lovins, Andrew Paul	D.C.
John E. Hesteth		B.S. 1948, D.C. Teachers College	

Lucas, Robert Oliver	Pa.	Lynch, Don Leon	Pa.
Lucas, Samuel M.		B.S. 1953, Central College	
B.S. 1944, M.B.A. 1955, University of Pittsburgh		Lynch, Dorothy Mae	
Luckett, Henry Shannon	Md.	Lynch, John Francis	
Luckhardt, Philip George	N.Y.	B.S. 1977, Maryland State Teachers College, Towson	
B.S. 1976, Columbia University		Lynch, Katherine Martin	
Lucky, George	Va.	B.S. 1954, D.C. Teachers College	
Lucy, Yvonne Frances	Va.	Lynch, Robert Michael	
Ludwig, Quentin	Ill.	B.S. & P.E. 1984, Carnegie Institute of Technology	
A.B. 1957, University of Chicago		Lynn, Andrew Jackson, Jr.	
Ludlow, Sally Anne	Va.	Lynn, Charles Cragan	
Ludlow, Loren Don	D.C.		
Ludlow, Jr., Lee	Texas	Lynn, James A.	
Ludlowman, Harold M.	Md.	A.B. 1968, A.M. 1970, University of California at Los Angeles	
A.B. 1926, University of Kansas		Lynn, Thomas Noel III	
A.M. in Ed. 1930, The George Washington University		B.S. 1965, University of Virginia	
Ludman, Alan Edward	Md.	Lynn, Carl Vernon	
Lucking, Francis Joseph	Va.	A.B. 1949, West Virginia Wesleyan	
B.S. in E.E. 1956, University of Louisville		A.M. 1961, American University	
Ludman, Charles Garford	Nebr.	Lyon, Hazel Lee	
A.B. 1962, U.B. 1958, University of Nebraska		Lyon, Patricia Ann	
Lurker, Thomas Bernard	Pa.	Lynn, Donald Joseph	
Lusk, Joan Elizabeth	Va.	Lynn, Theodore Lee	
Lusk, Alexander	Alaska	Lyster, James William	
B.S. 1978, Fairleigh University		A.B. 1974, Temple University	
Lusk, Harry Son Lou	Hawaii	Lyle, T. Warren	
B.S. 1957, New York University		Lyle, John Albert	
M.S. 1961, Columbia University		B.S. 1951, The George Washington University	
Lund, Dorothy Alice	Va.		M
Lund, John Charles	Md.		
Lundberg, Esther L.	Va.	Ma, Hsueh-Ling	
A.B. 1946, University of Southern California		MacAllister, Adelia Orden	
Lundgren, Edward Charles, Jr.	Md.	MacArthur Edgar Hutton	
Lundin, William M. Kenzie	N.Y.	A.B. in Govt. 1951, The George Washington University	
A.B. 1951, New York University		Macaulay, Joseph Hugh	
Lunney, William John	Pa.	MacClimch, Kathryn Schaeffer	
Lurand, Timothy B.	D.C.	B.S. 1911, University of Illinois	
Lusko, Peter	Md.	MacDonald, John Coyle	
Lusko, Raphael Vincent	Va.	MacDonald, Robert Childs	
Lusson, Thomas A. Arthur, Jr.	Texas	MacDonald, Robert Paul	
A.B. 1974, Duke University		MacDonald, William W.	
Lustre, William	N.Y.	MacDonald, William R.	
B.S.E. 1976, College of the City of New York		B.S. 1961, U.S. Naval Academy	
Lutz, Joyce, James Vincent	Va.	Maer, Stephen	
Lutz, Eric James	N.Y.	Maer, Felix Samuel	
Lutton, Norbert Marshall	D.C.	Maer, Pauline Mary Elizabeth	
A.B. 1948, University of Maryland		Maer, Allen Joseph	
Lutten, Robert Arlen	R.I.	Maer, Lee H.	
Luttenberger, David George	D.C.	Maer, Christian	
A.B. 1968, Pomona University		Maer, Thomas 1958, Universidad Nacional de Nicaragua	
Lutter, Frank William	D.C.	Maer, Adam Maria	
B.S. 1972, University of California		IL.M. 1961, M.Pd. St. 1974, University of Iowa, P.I. Ind.	
Lutz, George Ward	Fla.	Maer, Robert Alexander	
B.S. & M.F. 1942, University of Iowa		A.B. 1961, Boston College	
Lutz, Henry Stevens	D.C.	Maer, Robert James	
B.S. 1978, Georgetown University		Maer, David 1969, University of Iowa	
Lutz, Thomas Richard	Wa.	A.B. 1947, A.M. 1949, University of Iowa	
B.S. in Ed. 1976, University of Idaho		Maer, James Leonard	
Lutz, George Alexander	D.C.	B.S. 1964, D.C. Teachers College	
B.S. 1943, D.C. Teachers College		A.M. 1966, New York University	
Lutz, Michael	Idaho	Maer, Sally Ann	
Lutz, Richard Sales	Texas	B.S. 1967, Maryland State Teachers College	
Lyle, Nelson Bruce	D.C.	Maer, Newman Dexter	
Lynn, Ronald Milo	D.C.	B.S. 1968, University of Maryland	
Lynch, Barbara Ann	D.C.		

Students Registered

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Levy, Gene			
Levy, University of Utah	Md	Maggio, Margaret Mary	N J
Levy, John David		Maggio, James Carter, Jr.	Va
Levy, Yale University	D C	Majors, Lawrence Richard	Va
Levy, Joseph		A.B. 1947, Maryland Seminary	
Levy, Joseph W.	Va	Majors, Erston F.	Va
Levy, Edward Wallace, Jr.	Pa	B.S. 1954, Temple University	
Levy, Herbert Beaton	Miss	Magnan, Mark W.	Fla
Levy, Trinity College	Md	B.S. 1957, University of Maryland	
Levy, University of		Magnus, James Everett	Md
Levy, University of	Pa	B.S. 1957, University of North Carolina	
Levy, University of		Magnus, Andrew June	D C
Levy, The George Washington	N C	A.B. 1941, University of Montana	
Levy, Robert F.		A.M. 1948, Columbia University	
Levy, Lafayette College	Va	Magnus, Donald R.	Va
Levy, Mary Ann		Magnus, Anne June	Va
Levy, Columbia University	Va	Magnus, John Barry	Va
Levy, George Heister		Magnus, John Lee	Va
Levy, The George Washington	Va	Magnus, Katherine Paul	Md
Levy, The George Washington		A.E. 1954, Randolph-Macon Woman's College	
Levy, Mable Beardsley		Mahoney, Alce	D C
Levy, Ann Armstrong	Fla	Mahaffey, Lucienne Wingo	Va
Levy, Western Michigan College	Va	Mahon, Alvin Michael, Jr.	Va
Levy, Robert H.		Mahoney, Margaret M.	Fla
Levy, A.B. 1947, Rutgers University	Wyo	Mahon, Frank May	Texas
Levy, The George Washington		B.S. 1944, M.S. 1945, North Texas State College	
Levy, The George Washington	Greece	Mahoney, Eugene	
Levy, The George Washington		A.B. 1947, The George Washington University	Va
Levy, The George Washington		Mahoney, Frank Joseph III	Va
Levy, The George Washington		Mahoney, Homer Robinson, Jr.	Fla
Levy, The George Washington		Mahoney, John Helen	Fla
Levy, The George Washington		A.B. 1947, University of Maryland	
Levy, The George Washington		Mahoney, John Andrew	Md
Levy, The George Washington		Mahoney, Robert Joseph	D C
Levy, The George Washington		B.E.A. 1958, University of Montana	
Levy, The George Washington		Mahoney, Lillian Margaret	Va
Levy, The George Washington		B.E.A. 1958, St. John's University	
Levy, The George Washington		Mahoney, Phyllis Handway	D C
Levy, The George Washington		B.S. 1944, Ph.D. 1957, University of Wisconsin	
Levy, The George Washington		Mahoney, John Joseph	N Y
Levy, The George Washington		B.S. 1948, Ph.D. 1957, University of Wisconsin	
Levy, The George Washington		Mahoney, Katherine Marie	N J
Levy, The George Washington		Mahoney, Lawrence Margaret	D C
Levy, The George Washington		Mahoney, Stephen Michael	N Y
Levy, The George Washington		Mahoney, Philip David	Conn
Levy, The George Washington		A.B. 1947, Bates College	
Levy, The George Washington		Mahoney, Frances Kathleen	Pa
Levy, The George Washington		A.B. 1947, Andrew College	
Levy, The George Washington		Mahoney, Roger John	D C
Levy, The George Washington		A.B. 1947, Eastern University	
Levy, The George Washington		Mahoney, John	Brill
Levy, The George Washington		Mahoney, Charles Robert	Va
Levy, The George Washington		Mahoney, Robert Francis, Jr.	N C
Levy, The George Washington		B.S. 1947, Eastern College	
Levy, The George Washington		Mahoney, William Richard	Md
Levy, The George Washington		Mahoney, James Leonard	N H
Levy, The George Washington		B.S. 1948, University of New Hampshire	
Levy, The George Washington		Mahoney, George Thomas	Md
Levy, The George Washington		B.C. 1948, M.F.A. 1947, Columbia University	
Levy, The George Washington		Mahoney, Marion Kenneth	Va
Levy, The George Washington		A.B. 1948, A.M. 1951, University of California	
Levy, The George Washington		Mahoney, Paul Francis	Miss
Levy, The George Washington		A.B. 1948, College of St. Thomas	
Levy, The George Washington		Mahoney, George Ivan	W Va
Levy, The George Washington		B.S. 1948, Central College	
Levy, The George Washington		Mahoney, Albert Allen	D C
Levy, The George Washington		A.B. 1949, Sydnor University	

Malley, Clifford Fabian, Jr. A.B. 1952, Marietta College	Ohio	Manning, Louis Menough Manning, Marian Orestia Manning, Randall Manning, Richard Thomas Manning, William Henry, Jr. A.B. 1954, Emory University B.S. 1957, Georgia Institute of Technology
Mallory, Daniel Peter A.B. in Govt. 1954, The George Washington University	D.C.	Mandolikas, Paul Angelo B.S. 1955, University of Pittsburgh M.B.A. 1957, University of Pennsylvania
Mallory, Ann Elizabeth B.S. 1951, Roosevelt University I.D. 1958, Northwestern University	Va.	Mann, John Joseph B.S. in Ch.E. 1954, Catholic University of America
Malone, Dana Bradford A.B. 1948, Harvard University	Ill.	Mann, Charles Russell Mann, Joan Louise A.B. 1957, College of William and Mary Mann, Mary C. Mann, Milton A.B. 1947, University of Nevada Mann, Mitchell Charles B.S. in E.E. 1951, Evansville College Mannfield, Herbert Sydney A.B. 1947, Cornell University Mannfield, Joan Louise Mannix, Boris Miron A.B. in Ed. 1951, West Liberty State College
Mallory, David Michael Mallory, Sandra Louise Mannix, James Edward Mannix, Judith Marie Mannix, Edward Joseph A.B. 1954, Lehigh College A.M. 1957, Johns University	D.C.	Mannix, Jean B.S. 1946, University of Kansas Mannix, Orlan Mannix, Hilda Africa Mannix, Michael George Mannix, Barbara Jean Mannix, James Benjamin B.S. in Ch.E. 1957, Clemson Agricultural College
Mallory, Lee Edgar B.C.E. 1947, Rensselaer Polytechnic Institute	N.Y.	Mannix, Penelope, Jr. B.S. 1955, Webb Institute of Naval Architecture M.S. 1956, Massachusetts Institute of Technology Mannix, Patricia Theresa Mannix, Mary Eugene B.S. 1954, West Liberty State College Mannix, Victor A.B. 1957, College of St. Benedict Mannix, Ann George B.S. 1957, New York State Teachers College, Baiton
Maltz, Albert Gerald B.S. 1953, D.C. Teachers College F.M. 1957, University of Maryland	Ill.	Mannix, Alan H. Mannix, Kathryn Basile A.B. 1957, College of St. Benedict Mannix, Helen Marie Mannix, Ruth Mannix, Susan Christine, Jr. Mannix, William A.B. 1947, A.M. 1948, University of Cincinnati Ph.D. 1957, University of Cincinnati Mannix, Philip Morgan A.B. 1957, University of Nevada Mannix, Christina McArthur A.B. 1957, The George Washington University Mannix, Catherine Christopher Mannix, Lawrence Stanley B.S. in M.E. 1957, Drexel Institute of Technology Mannix, Jo Ann Mannix, Diane Karen
Maltz, Harry Isaac A.B. 1956, New York University B.S. in Phys. 1958, The George Washington University	Ill.	Mannix, Walter Frederick B.S. 1957, Lehigh University Mannix, John Raymond B.S. in Eng. 1957, The George Washington University
Mallory, Thomas Richard B.S. in Phys. 1958, The George Washington University	Ill.	
Mannix, Lawrence Louis Mannix, William Thomas Mannix, Gordon David Mannix, Sarah C.	Va.	
Mannix, Sarah C. B.S. 1957, University of Maryland	Va.	
Mannix, Robert Westman Mannix, Philip George Mannix, Harry Armstrong A.B. 1955, College of William and Mary I.D. 1957, McCormick Seminary Mannix, Helen Susan A.B. 1948, Queens College A.M. 1957, University of Minnesota	Ill.	
Mannix, John Mannix, Charles Everett Mannix, Harold Eugene Mannix, William Lee Mannix, Douglas Donald Mannix, Francis H., Jr. Mannix, John A. Joseph B.S. 1957, University of Maryland	N.Y.	
Mannix, Maria Rose Mannix, Patricia Gaudin Mannix, Oscar Mannix, Walter Frederick B.S. 1957, Lehigh University Mannix, John Raymond B.S. in Eng. 1957, The George Washington University	D.C.	

Students Registered

645

Martens, Patricia Ann A.B. 1955, Trinity College Conn. N. K.	D.C.	Marshall, Ruth	D.C.
Martens, Michael Lawrence D.C.	D.C.	Marshall, Susan Eugene	Va.
Martens, Robert Hans D.C.	D.C.	Marshall, Thomas Craig	D.C.
Martens, S. J. D. 1951, Frederico Washington University, Cincinnati Washington, University	Ohio	Marshall, Ludwig Weaver A.B. 1952, The George Washington University	N.C.
Martens, George Washington III Md.	Md.	Martens, Louis Richard A.B. 1955, Harvard University	N.Y.
Martens, Helen Roe Va.	Va.	Martens, Mary Dolores A.B. 1956, University of Maine	Maine
Martens, Steve Henry Canada	Canada	M.N. 1951, Yale School of Nursing M.P.H. 1957, Harvard School of Public Health	
Martens, W. M. A. State University Va.	Va.	Martens, William Frank B.S. 1954, Eastern Kentucky State College	Va.
Martens, William Lyle Md.	Md.	Martens, Alfred Patrick B.L.B. 1954, Manhattan College	Va.
Martens, Peter Va.	Va.	Martens, Carol Parker M.A. 1955, University of Maryland	Texas
Martens, Mary Lynn Hawaii	Hawaii	Martens, Charles Leonard B.S. 1955, University of Kansas	Kans.
Martens, Steve David D.C.	D.C.	Martens, Charles Leonard B.S. 1955, University of Kansas	Va.
Martens, University of Texas N.C.	N.C.	Martens, Carol Albert B.S. 1955, Iowa State College	Idaho
Martens, Robert Franklin, Jr. D.C.	D.C.	Martens, M. A. 1957, The George Washington University	Md.
Martens, Charles Austin, Jr. N.C.	N.C.	Martens, Gerald B.S. 1955, P.E. 1956, University of Denver	Va.
Martens, The George Washington Va.	Va.	Martens, Glenn Edward B.S. 1955, Pennsylvania State University	Md.
Martens, John Howard Idaho	Idaho	Martens, Harold LeRoy A.P. 1955, The George Washington University	D.C.
Martens, William Young University Md.	Md.	Martens, James Richard M.A. 1955, University of Tokyo, Japan	Va.
Martens, Mary Edward N.C.	N.C.	Martens, Mary Louise M.A. 1955, University of Tokyo, Japan	Va.
Martens, University of Maryland N.C.	N.C.	Martens, Mary V. M.A. 1955, University of Tokyo, Japan	Va.
Martens, North Carolina State Teachers D.C.	D.C.	Martens, Norman Lawrence M.A. 1955, University of Tokyo, Japan	Va.
Martens, Peter Street D.C.	D.C.	Martens, Francis Lee M.A. 1955, University of Tokyo, Japan	Va.
Martens, Robert Michael D.C.	D.C.	Martens, Richard Lee M.A. 1955, University of Tokyo, Japan	Va.
Martens, M. L. 1951, Pennsylvania State Pa.	Pa.	Martens, Richard Reynolds A.B. 1955, University of Tokyo, Japan	Va.
Martens, Robert N.Y.	N.Y.	Martens, Robert George A.B. 1955, University of Tokyo, Japan	Va.
Martens, The George Washington N.Y.	N.Y.	Martens, Stephen George A.B. 1955, University of Tokyo, Japan	Va.
Martens, Mary B. Va.	Va.	Martens, Warren H. A.B. 1955, University of Tokyo, Japan	Va.
Martens, Eugene D.C.	D.C.	Martens, William Lockley A.B. 1955, University of Tokyo, Japan	Va.
Martens, Anthony College Va.	Va.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, M. L. 1951, Pennsylvania State Md.	Md.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, V. J. 1951, Pennsylvania State Md.	Md.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, Thomas Md.	Md.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, John Md.	Md.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, University of Notre Dame Md.	Md.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, Robert Roy Md.	Md.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, A. J. 1951, Pennsylvania State Md.	Md.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, D. C. Teachers College D.C.	D.C.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, Mary D.C.	D.C.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, Katherine D.C.	D.C.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, David J. Md.	Md.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, University of Kentucky Ky.	Ky.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, George Hamilton D.C.	D.C.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, V. J. 1951, Pennsylvania State D.C.	D.C.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, John D.C.	D.C.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, University of Kentucky Ky.	Ky.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, John Hamilton Lyle D.C.	D.C.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, University of Maryland D.C.	D.C.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio
Martens, Robert Conally D.C.	D.C.	Martens, William Lyle B.S. 1955, Ohio State University	Ohio

Marwick, Claire Sklaroff	D.C.	Matthews, Joseph Oscar, Jr.	Pa.
Marwatt, Elizabeth	Ill.	A.B. 1954, St. Bonaventure University	Va.
Maseng, Janet	Va.	Matthews, Neely Forsyth Jones	D.C.
Mask, Sara Harriette	Va.	B.S. in Eng. 1957, The George Washington University	Va.
A.B. 1956, Mary Washington College	Mass.	Matthews, Patricia Elvin	Va.
Maska, Edwin Chester	D.C.	Matthews, Reynold Judson	Va.
B.S. 1951, University of Pennsylvania	Mont.	Matthews, Robert George	Va.
Mason, Franklin	Va.	B.T. Design, 1946, Pratt Institute	
Mason, Jacqueline Josephine	D.C.	Matthews, Samuel Sheldin	
Mason, James Kent	Mont.	B.S. 1958, The George Washington University	
Mason, John Keith	Va.	Matthews, William Alexander	
B.S. 1954, Rocky Mountain College	Va.	A.B. in Govt. 1956, The George Washington University	
Mason, Letty Ann	D.C.	Matthews, William Bruce, Jr.	
Mason, Margaret Mary	D.C.	B.S. 1951, University of Maryland	
Mod. B. 1952, Marywood College	Md.	Mattison, Charles I. Jr.	
Mason, Maurice David	Md.	A.B. 1954, Stanford University	
Mason, Paul Joseph	D.C.	Mattison, Ernest Ray	
A.B. 1951, Bowdoin College	D.C.	L.B. 1957, University of Baltimore	
A.M. 1954, Harvard University	Pa.	A.B. 1942, University of Maryland	
Mason, William Allen	Va.	Mattison, Melvin Earl	
B.S. in E.E. 1957, University of Florida	Va.	B.S. 1951, U.S. Merchant Marine Academy	
Mason, Elizabeth	D.C.	A.B. 1951, The George Washington University	
Mastey, Frances May	Pa.	Matsula, Stephen Charles	
Mastey, Anne Amelia	N.J.	Mattson, Florence Mary	
Mastey, John Cecelia	D.C.	A.B. 1952, Sweet Briar College	
A.B. 1946, St. Mary's University	Va.	Mattson, Herbert Maurice	
A.M. 1949, Catholic University of America	Va.	Mattson, Pauline	
Mastey, Joseph Charles	Va.	A.B. 1941, Municipal University of Omaha	
Mastey, Lucille Cameron	Md.	Mattson, Freda Angela	
Mastey, William Edmund	D.C.	Mattson, George Francis	
Mastey, Betty Kay	D.C.	B.C.E. 1957, Virginia University	
Mastey, Edith Virginia	D.C.	Mattson, Margaret Louise	
A.B. 1957, Mary Washington College	Va.	Mattson, Henry Keenan	
Mastey, Helen Boud	D.C.	Mattwell, Laurence Robert	
A.B. 1952, A.M. 1955, The George Washington University	Va.	B.S. 1957, University of Pennsylvania	
Matt, Philip Wynn	D.C.	Matt, Alan Mason	
B.C.E. 1956, The George Washington University	D.C.	Mrs. Edgar Mattson	
Matt, Charles O'Fallon	Pa.	A.B. 1952, A.M. 1953, University of Florida	
Mattaromina, Constantine Leonidas	D.C.	Matt, John Loren	
A.B. in Govt. 1954, The George Washington University	D.C.	Matt, Matthew Virginia	
Mattaromina, Frank Joseph	D.C.	Matt, Mary Lee	
Mattaromina, Maria	D.C.	Matt, Mary Louise	
Mattaromina, Ronald Peter	D.C.	Matt, Joseph William	
Mattaromina, Joseph Anthony	D.C.	B.S. 1941, U.B. 1957, University of Kentucky	
Mattaromina, Jane Ann	Ill.	Mayer, Joe Fred	
Mattaromina, James Bonavent	D.C.	B.T. A. 1958, Rensselaer Polytechnic Institute	
Matthews, Fleming Wilson, Jr.	D.C.	Mayer, Myron Greig	
A.B. 1947, Harvard Institute of Technology	D.C.	Mayer, Myron Clyde	
Matthews, Floyd Francis, Jr.	D.C.	Mayer, Norman I.	
Matthews, Helen E.	D.C.	Mayer, Robert Mary	
Mattia, Jacob Leckwith, Jr.	D.C.	A.B. 1947, West Virginia University	
A.B. 1957, University of California	D.C.	Mayer, Mary Alma	
Mathes, Kristen Taylor	D.C.	Mayer, Charles Thomas	
B.S. 1958, M.S. 1958, Oronia University, India	D.C.	A.B. 1942, Ashland Christian College	
A.M. in Govt. 1953, The George Washington University	D.C.	Mayer, Henry Catharina	
Mathur, Dhanoo Indranto	D.C.	Mayer, Jean M. Jean	
Mathur, Indira Indranto	Va.	A.B. 1951, University of North Carolina	
Mathur, Gauri Lata	D.C.	Mayer, Raulo Dean	
Mathuram, Yama	D.C.	B.S. in E.E. 1957, University of Washington	
A.B. 1956, Whitier College	D.C.	Mayer, Albert Salvatore	
Matta, Bernard John	D.C.	B.B.A. 1957, College of the City of New York	
Mattay, George Louis	D.C.		
Matthias, Jean Yvonne	D.C.		
A.B. 1951, D.C. Teachers College			
A.M. 1956, New York University			

Students Registered				647
Frank Louisa	D C	McCartney, Henry Allen	Va	
George, 1915, The George Washington University		A.B. 1915, Hampton College		
Wm. John O'By	D C	McCarthy, William Alexander	Fla	
Spokane University		B.S. in Acad. 1917, University of Florida		
1911, The George Washington University		MacCarty, William Edward	Md	
University		B.S. 1919, University of Maryland		
Andrew	Md	McCarthy, Stanley George	Ariz	
1911, The George Washington University		McCarthy, Timothy Francis	Va	
1911, The George Washington University		A.B. 1919, University of Pennsylvania		
Brooklyn, N.Y.		McCawley, Fred Joseph	Fla	
U.S. Military Academy	S C	B.S. 1917, Florida State University		
University of Iowa		McCawley, Paul James	Md	
University	N J	McCarthy, Leonard Wallace	D C	
University		McClain, David Philipworth	Fla	
Robert Bernard	Md	A.B. 1917, Texas University		
1911, The George Washington University		McClain, Philip White	D C	
1911, The George Washington University		McClain, Leonard Frank Lee	Ill	
1911, The George Washington University		A.B. 1917, University of Kansas		
1911, The George Washington University		McClain, Duane Rodney	D C	
1911, The George Washington University		McClain, James Benton	Va	
1911, The George Washington University		McClain, Alvin Thornton	Md	
1911, The George Washington University		McClain, Edward Stuart	Va	
1911, The George Washington University		McClain, Thomas Allen	Md	
1911, The George Washington University		McClain, Thomas Rufus	Texas	
1911, The George Washington University		B.S. 1917, U.S. Naval Academy		
1911, The George Washington University		A.B. 1917, California Institute of Technology		
1911, The George Washington University		McClain, Charles Isaac	Va	
1911, The George Washington University		B.S. 1915, Virginia Military Institute		
1911, The George Washington University		McClain, Robert James	D C	
1911, The George Washington University		B.S. 1915, Texas University		
1911, The George Washington University		McClain, David Walter	Md	
1911, The George Washington University		McClain, John Alexander	Md	
1911, The George Washington University		A.B. 1917, The George Washington University		
1911, The George Washington University		McClain, John Robert	Va	
1911, The George Washington University		McClain, John	D C	
1911, The George Washington University		McClain, Mary Elie	D C	
1911, The George Washington University		McClain, Joseph Morris	Va	
1911, The George Washington University		B.C.E. 1917, Ohio State University		
1911, The George Washington University		McClain, Alvin Romeo	Md	
1911, The George Washington University		A.B. 1917, University of Richmond		
1911, The George Washington University		McClain, James Eugene	Md	
1911, The George Washington University		McClain, Terry James	D C	
1911, The George Washington University		B.S. 1917, Tennessee Polytechnic Institute		
1911, The George Washington University		McClain, Thomas Eugene	Va	
1911, The George Washington University		McClain, George Robertson	Md	
1911, The George Washington University		McClain, John Joseph	Md	
1911, The George Washington University		B.S. 1917, Ohio College		
1911, The George Washington University		McClain, James Griffin	Ariz	
1911, The George Washington University		A.B. 1915, University of Arizona		
1911, The George Washington University		McClain, Kate Gary	D C	
1911, The George Washington University		McClain, Richard Gustave	Va	
1911, The George Washington University		McClain, William Kenneth	Md	
1911, The George Washington University		B.C.E. 1917, University of British Columbia		
1911, The George Washington University		McClain, Anne Frances	D C	
1911, The George Washington University		A.B. 1917, William College, Pa		
1911, The George Washington University		McClain, Elizabeth Jane	Va	
1911, The George Washington University		B.S. 1917, St. John's University		
1911, The George Washington University		McClain, Elmer	Va	
1911, The George Washington University		A.B. 1917, Johns Hopkins University		
1911, The George Washington University		McClain, Mary E. Jr.	La	
1911, The George Washington University		B.S. 1917, U.S. Military Academy		
1911, The George Washington University		McClain, Philip Lawrence	Md	
1911, The George Washington University		McClain, Mary Louise	Md	
1911, The George Washington University		McClain, Kenneth Louis	N C	
1911, The George Washington University		N.C. 1917, Marshall College		
1911, The George Washington University		McClain, Norman John	D C	
1911, The George Washington University		F.M.E. 1917, Howard University		

McCreedy, James Edward	Pa	McEniry, Mary Anne	Ala
B.S. 1958, Westminster College		B.S. 1942, University of Alabama	
McGurie, Thomas Russell	Md	McEwen, Paul James	Pa
B.S. 1942, Ed.D. 1952, Bradley		B.S. 1925, Lehigh University	
University		McFadden, Mary Haynes	Pa
M.S. 1947, Iowa State Teachers College	Ohio	McFann, Charles Eugene	Pa
McCulloch, Nancy I.		B.S. in M.E. 1958, Valparaiso University	
A.B. 1952, B.S. 1955, Ohio State		McFay, Hester Kay	Pa
University		McFay, Margaret Ellen	Pa
McCullough, James Matthew	Va	McGallagher, Russell Lee	Va
B.S. 1951, M.S. 1952, Pennsylvania		B.C.S. 1957, University of Virginia	
State University		McGarry, Elizabeth Ann	Va
McCurry, Donald Allen	Va.	McGavin, Paul Peter	Va
B.S. in E.E. 1954, Rose Polytechnic		B.S. in E.E. 1957, Lehigh University	
Institute		McGawock, Jane Pendleton	D.C.
McDaniel, Catherine M.	D.C.	McGee, Ronald Dexter	D.C.
McDaniel, Haydon A., Jr.	Ca.	McGee, Edgar O. Neal	D.C.
McDaniel, Herman	Va	B.S. 1944, Howard University	
McDaniel, Loren Webb	Md	McGee, James Augustus Jr.	N.C.
McDaniel, Ronald Edward	Md	B.S. in C.E. 1956, University of	
McDaniel, Patricia May	Va	Maryland	
McDermott, Edward Park		McGee, James Joseph	Pa
B.S. 1947, University of		McGee, Thomas Raymond	Pa
Arkansas		McGibson, Patricia Leann	Pa
McDermott, Edwin Floyd	Ohio	McGovern, John Wilton	Pa
A.B. 1951, Indiana University		A.B. 1948, A.M. 1950, University of	
McDermott, Patricia Louise	Idaho	Idaho	
A.B. 1958, Idaho State Teachers College		McGowan, Duane Maxteen	Pa
McDermott, Robert Campbell	Va	McGowan, William F. Dean	Pa
B.S. 1958, Swarthmore College		A.B. 1957, Washington and Jefferson	
McDonald, Anne Varner	D.C.	College	
A.B. 1951, Morris Harvey College		B.S. in M.E. 1957, Carnegie Institute	
McDonald, Burton Clayton	Va	of Technology	
I.L.B. 1956, University of South Dakota		McGowan, James Henry III	Va
McDonald, David D.	Mont.	A.B. 1955, University of Virginia	
A.B. 1951, Montana State University		McGrath, James Russell	
McDonald, Debra Arlene	D.C.	B.A.E. 1957, Catholic University of	
McDonald, Douglas Keith	D.C.	America	
A.B. 1950, Williams College		McGrath, Mabel Leahy	Pa
McDonald, Eugene Charles	Calif.	McGrath, Margaret Marion	Pa
B.S. 1948, U. S. Military Academy		McGrath, Michael Patrick	Pa
McDonald, Fredrick A.D.	Va	McGrath, Thomas Michael	Pa
McDonald, Howard Victor	W Va.	McGrath, James F.	Pa
McDonald, James I.	Pa	B.S. 1952, Lehigh University	
A.B. 1956, LaSalle College		McGrath, Patrick Edward	Pa
McDonald, James Kenneth	Va	A.B. 1957, New York University	
A.B. 1954, Yale University		McGrath, James Edward	Pa
McDonald, Malcolm Theodore	Va.	McGrath, James Stuart	Pa
B.S. 1952, University of North Carolina		A.B. 1953, Seton Hall College	
McDonald, Stanley B.	Va	McGrath, Patrick Edward	Pa
A.B. 1952, I.L.B. 1954, University of		McGrath, Margaret Ann	Pa
South Dakota		McHale, William George	Pa
McDonald, Thomas Joseph	Va	McHenry, William Foster Jr.	Pa
McDonald, William Franklin	Md	McHenry, William Foster Jr.	Pa
McDonald, Alexander Patrick	N.Y.	A.B. in Geology, The George	
McDonald, James Joseph	W Va.	Washington University	
A.B. 1956, West Virginia University		McHale, John Richard	Pa
McDonald, John Michael	N.Y.	McHale, George Thomas	Pa
McDonald, William Edward		McHale, George Thomas	Pa
A.B. 1958, Hampton College		A.B. 1956, B.S. 1958, Hampden-Sydney	
McDonald, Nancy Mary	D.C.	College	
B.S. 1951, Our Lady of the Lake		McHenry, Philip Michael	Pa
College		McHenry, John Philip	Pa
McDonnell, Lawrence A.	Va	McHenry, David Foreman Jr.	Pa
McDonnell, William Wanda Jr.	Md	B.S. in E.E. 1952, U. S. Coast and	
E.E. 1954, Johns Hopkins University		Geodetic Survey	
McDonnell, Mary Louise	D.C.	McHenry, Elizabeth Ann	Pa
McDonnell, Anne Mae	Va	McHenry, James Arthur	Pa
McDonnell, Matthew Kenneth		B.S. 1956, U. S. Military Academy	
A.B. 1954, Thiel College		McHenry, Theodore William	Pa
McDonnell, Eugene Francis	D.C.	B.E. 1954, Johns Hopkins University	
B.S. in E.E. 1951, A.M. 1952,		McHenry, Thomas James	Pa
Georgetown University		McHenry, Anne M. Anne	Pa
		A.B. 1956, College of Western	

[illegible]

Medina, Tomas Alfonso	Honduras	Merger, Margaret	D.C.
Medina, William Antonio	Md	A.B. 1938, M.S. 1944, Ph.D. 1948, Pennsylvania State University	P.
A.B. 1937, The George Washington University	Va	Merfeld, Elizabeth Wyle	Va
Mezey, James	Md	Merfeld, Gustav Bruno	M
Mezzanotte, William Jay	N.Y.	B.S. 1956, Carnegie Institute of Technology	
Mezger, Carol Margaret	Va	Merriam, Nancy Leon	
A.B. 1952, Pembroke College		B.S. 1950, Maryland State Teachers College, Salisbury	
Meeks, Jesse Olin, Jr.	Ind.	A.M. 1950, Columbia University	Academy
A.B. 1950, Howard College		Merriam, Thomas Elmer	M
A.M. 1951, Peabody College		Merriam, Robert Merriam	Va
Meers, Josephine Marie	Ala	Merriam, James Lee	Md
A.B. 1946, The George Washington University		B.S. 1937, University of Maryland	
Mentem, Ernest Melford	D.C.	Merrill, Thelma Lee	
B.S. 1937, University of Alabama		Merrill, Anna Wille	
Merrill, David Robert	D.C.	A.B. 1941, Tennessee Valley College	
Merrill, Henry Newton, Jr.	Md	Merrill, John Franklin	
Metcalfe, Richard Herman	D.C.	B.S. 1946, Georgetown University	
B.S. 1942, Virginia Polytechnic Institute		Merrill, Edward John	
Methin, Michael Martin, Jr.	D.C.	B.S. 1943, Pennsylvania State University	
B.S. in Ed. 1954, D.C. Teachers College		Merrill, Patricia Ann	
Metcalf, Robert	D.C.	B.S. 1945, Northwestern University	
Metcalf, Milton Samuel	Va	Merrill, Lawrence James	
B.C.E. 1934, Rensselaer Polytechnic Institute		B.S. & C.E. 1935, University of Kansas	
Metcalf, Robert Walter	Md	Merrill, Ann Cordell	
Metcalf, Arvid Peter	Va	Merrill, Charles White	
Metcalf, Dana Carolyn	D.C.	Merrill, Theodore Wilson	
Metcalf, Jonathan Corwin	Va	B.S. & C.E. 1934, State University of Iowa	
Metcalf, Archie Raymond, Jr.		Merritt, Harriet Louise	
A.B. 1947, San Diego State College	Mo	A.B. 1945, Georgia State College	
Metcalf, Edward Paul		Merritt, James Vernon	
A.B. 1949, University of Missouri	Va	Merritt, James	
Metcalf, Mary Ann	D.C.	A.B. 1948, University of Maryland	
Metcalf, Edwin Antonio	Md	Merritt, Robert R.	
Metcalf, Raymond	D.C.	Ph.D. 1949, B.S. 1948, A.M. 1946, University of Chicago	
B.S. 1947, Manhattan College		Merr, Alan Clay	
Metcalf, Olin Anna	Calif.	Merrill, Florence C.	
Metcalf, Gabriela Adolfo	Ohio	Metcalf, Thomas Stephen	
Metcalf, Philip Glenn		Metcalf, John Elmer	
B.S. 1944, University of Cincinnati	Va	Metcalf, Susan Dee	
Metcalf, Michael Nicholas		Metcalf, William W. III	
B.C.E. 1947, Pratt Institute	Pa	Metcalf, William W. III	
Metcalf, Dorothy		B.P.A. 1948, Tulane University	
A.B. 1949, Georgia College	D.C.	Metcalf, Toni	
Metcalf, William Hubert, Jr.	Md	Metcalf, James Philip	
Metcalf, Ronald Hope	D.C.	A.B. 1947, Roosevelt University	
Metcalf, Arnold Charles		Metcalf, Rudolph Arnold	
B.S. in Eng. 1955, The George Washington University	D.C.	A.B. 1949, Texas Institute of Technology	
Metcalf, Sylvia Ann	Va	A.B. 1951, Rutgers State College	
Metcalf, Virginia		A.B. 1951, Virginia University	
B.S. in Ed. 1950, Union College of Maryland		A.M. 1952, Tulane University	
Metcalf, A.M. in Ed. 1957, The George Washington University	Mass	Metcalf, Thomas	
Metcalf, Donald John	D.C.	B.S. 1949, East Texas State University	
Metcalf, Bruce Stephen		Metcalf, Richard James	
A.B. in Eng. 1947, The George Washington University	Va	Metcalf, Eugene	
Metcalf, Gilbert Hancock	D.C.	Metcalf, Eugene	
Metcalf, Eric Stuart	D.C.	Metcalf, Eugene	
Metcalf, George Henry	Ind.	Metcalf, Eugene	
Metcalf, Herman Richard	D.C.	Metcalf, Eugene	
Metcalf, Farrah	Fla.	Metcalf, Eugene	
Metcalf, Karen Linda	D.C.	Metcalf, Eugene	
Metcalf, Abbie Belle	D.C.	Metcalf, Eugene	
Metcalf, Donald Marcellous		Metcalf, Eugene	
Metcalf, Eugene Bernard	Va	Metcalf, Eugene	
B.S. 1947, D.C. Teachers College		Metcalf, Eugene	
Metcalf, Fred		Metcalf, Eugene	

Students Registered

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Students Registered				651
John, Lorraine Rochelle	Md	Miles, Wilson Ashley	Md	
John, Lorraine Rochelle	Md	B.S. 1937, University of Maryland		
John, Lorraine Rochelle	Md	Miles, William Anne	Md	
John, Lorraine Rochelle	Md	A.B. 1936, Haver College		
John, Lorraine Rochelle	Md	Miles, Betty Jean	Va	
John, Lorraine Rochelle	Md	Miles, Mike M.	Va	
John, Lorraine Rochelle	Md	B.S. 1941, A.M. in Ed. 1949,		
John, Lorraine Rochelle	Md	The George Washington University		
John, Lorraine Rochelle	Md	Miles, David Richard	Md	
John, Lorraine Rochelle	Md	A.B. 1936, The George Washington		
John, Lorraine Rochelle	Md	University		
John, Lorraine Rochelle	Md	Millard, James Hudson	Va	
John, Lorraine Rochelle	Md	B.S. 1941, Georgetown University		
John, Lorraine Rochelle	Md	Millard, John Preston	Md	
John, Lorraine Rochelle	Md	B.S. 1938, University of Maryland		
John, Lorraine Rochelle	Md	Miles, Jay I.	Md	
John, Lorraine Rochelle	Md	B.S. 1937, University of Kansas		
John, Lorraine Rochelle	Md	Miller, Anne Harriet	Wash	
John, Lorraine Rochelle	Md	B.S. 1939, State College of Washington		
John, Lorraine Rochelle	Md	Miller, Anne Howard	Va	
John, Lorraine Rochelle	Md	Miller, Alvin	D.C.	
John, Lorraine Rochelle	Md	Miller, Andrew Clements	Va	
John, Lorraine Rochelle	Md	Miller, Anne Upton	D.C.	
John, Lorraine Rochelle	Md	A.B. 1938, Rensselaer College		
John, Lorraine Rochelle	Md	Miller, Beverly Anne	Pa	
John, Lorraine Rochelle	Md	Miller, Richard Dugan	Pa	
John, Lorraine Rochelle	Md	B.S. 1941, Allegheny College		
John, Lorraine Rochelle	Md	M.S. 1941, Ohio State University		
John, Lorraine Rochelle	Md	Miller, Charles Howard	Md	
John, Lorraine Rochelle	Md	B.S. 1937, University of Maryland		
John, Lorraine Rochelle	Md	Miller, Carol Lee	D.C.	
John, Lorraine Rochelle	Md	Miller, Carol Lee	Md	
John, Lorraine Rochelle	Md	Miller, Carol Raymond	N.C.	
John, Lorraine Rochelle	Md	Miller, Carolyn Louise	Va	
John, Lorraine Rochelle	Md	Miller, Cora R.	D.C.	
John, Lorraine Rochelle	Md	Miller, Donald Elmer	R.I.	
John, Lorraine Rochelle	Md	A.B. 1938, Iowa College		
John, Lorraine Rochelle	Md	L.B. 1941, Boston University		
John, Lorraine Rochelle	Md	Miller, Donald Louis	Va	
John, Lorraine Rochelle	Md	B.S. 1936, St. John's University		
John, Lorraine Rochelle	Md	at Miami		
John, Lorraine Rochelle	Md	Miller, David Eugene	Md	
John, Lorraine Rochelle	Md	A.B. 1941, University of Minnesota		
John, Lorraine Rochelle	Md	Miller, Philip Steven Jr.	Kans	
John, Lorraine Rochelle	Md	Miller, Francis Howard, Jr.	W.Va	
John, Lorraine Rochelle	Md	Miller, George Howard	D.C.	
John, Lorraine Rochelle	Md	Miller, Gerald Joseph	D.C.	
John, Lorraine Rochelle	Md	B.S. 1938, St. Joseph's University		
John, Lorraine Rochelle	Md	at Baltimore		
John, Lorraine Rochelle	Md	Miller, Harold Klumpp	Md	
John, Lorraine Rochelle	Md	B.S. 1941, Pennsylvania State		
John, Lorraine Rochelle	Md	University		
John, Lorraine Rochelle	Md	Miller, Isaac Jr.	Md	
John, Lorraine Rochelle	Md	B.S. 1934, Washington Military		
John, Lorraine Rochelle	Md	College		
John, Lorraine Rochelle	Md	Miller, Harvey Gerald	Va	
John, Lorraine Rochelle	Md	B.S. 1941, University of Pennsylvania		
John, Lorraine Rochelle	Md	A.M. 1941, University of Wisconsin		
John, Lorraine Rochelle	Md	Miller, Henry W. Jr.	Va	
John, Lorraine Rochelle	Md	B.S. 1941, St. Louis University of Iowa		
John, Lorraine Rochelle	Md	Miller, Jan Monroe	Pa	
John, Lorraine Rochelle	Md	Miller, James Charles	Md	
John, Lorraine Rochelle	Md	Miller, James Allen	Md	
John, Lorraine Rochelle	Md	A.B. 1941, New York University		
John, Lorraine Rochelle	Md	Miller, James Edgar	Md	
John, Lorraine Rochelle	Md	B.S. 1941, University of Maryland		
John, Lorraine Rochelle	Md	Miller, James Edward	Va	
John, Lorraine Rochelle	Md	Miller, Jay Howard, Jr.	Md	
John, Lorraine Rochelle	Md	B.S. 1941, The George Washington		
John, Lorraine Rochelle	Md	University		
John, Lorraine Rochelle	Md	Miller, John Edgar	D.C.	
John, Lorraine Rochelle	Md	A.B. 1941, University of California		

Miller, John David	Ill	Mills, Lewis Edwin
A.B. 1940, North Central College		Mills, Madeline L.
Miller, John Franklin	Va	M.B. 1943, Bucknell University
B.E.E. 1955, University of Florida		Mills, Paul Leonard
Miller, John Richard	Md	Mills, Robert Lee
Miller, Joseph Adolph	Md	Minnick, Patricia Leone
Miller, Leila Bradley	Md	Minnick, J. Smith, Jr.
A.B. 1918, Emory College		Minnick, Robert Campbell
Miller, Leonard Jay	Mass	Minnick, Vernon V.
B.S. 1957, Lowell Technical Institute		Minnick, Jerry Bennett
Miller, Lillian Micaly	Va	B.S. in E.E. 1957, Virginia Polytechnic Institute
A.B. 1940, Emory and Henry College		Minnick, Kenneth L., Jr.
Miller, Lois Mae	D.C.	Minnick, Benton Abbott
Miller, Lowell Eugene	D.C.	Minnick, Dorothy Elizabeth
Miller, Manley Albert	Va	A.B. 1947, Duke University
A.B. 1947, Emory and Henry College		Minnick, James W.
Miller, Marigau Margaret	Miss	A.B. 1929, Shepherd State College
Miller, Martin Richard	Pa	Minnick, Lucy Lee
Miller, Maryrose	Va	Minnick, Buck Jean
Miller, Morton Myron	Md	Minnick, Sherman Lee Soss
B.S. 1953, University of Maryland		Minnick, Warren Neri
Miller, Nan Denise	D.C.	Minnick, Eugene David
Miller, Norman Arthur	Va	B.S. 1957, University of Maryland
A.B. 1908, University of Denver		Minnick, Charles Edward, Jr.
Miller, Paul Hobart	Va	B.S. 1958, Pennsylvania State University
A.B. 1946, State University of Iowa		Minnick, Stanley Lewis
Miller, Phyllis Lynn	D.C.	B.S. 1958, University of Maryland
Miller, Robert Boyd	D.C.	Minnick, Burton Ray
A.B. 1957, Houghton College		A.B. in Geol. 1957, The George Washington University
Miller, Robert Burns	Ind	Minnick, John Yano
A.B. 1910, Earlham College		B.S. 1957, University of California at Los Angeles
Miller, Robert Dean	Va	Minnick, Katherine Lavelle
Miller, Robert Howison, Jr.	D.C.	Minnick, Raymond David
Miller, Robert Jay	D.C.	B.S. 1954, Massachusetts Institute of Technology
B.S. in C.E. 1957, Pennsylvania State University		Minnick, Elton Marie
Miller, Robert Lantz	Pa	Minnick, William Hammond
B.S. 1951, U.S. Naval Academy		Minnick, Ann Katherine Lelchuk
Miller, Ronald Clinton	D.C.	Minnick, Arthur Herbert
Miller, Ronald Jack	N.Y.	Minnick, Arthur Ray
A.B. 1958, The Citadel		Minnick, F.D. 1954, The George Washington University
Miller, Roy	D.C.	Minnick, Bertram Ferguson
B.S. in M.E. 1956, University of Washington		B.S. 1957, Stanford University
Miller, Ruth Ziegler	Md	Minnick, Charles Reese
A.B. 1957, The George Washington University		B.S. 1957, University of Alabama
Miller, Sheila Marie	Va	Minnick, David Alan
A.B. 1951, Beaver College		A.B. 1957, University of Virginia
Miller, Thomas Edward	D.C.	Minnick, Donald Raymond
Miller, Vivian Cavatapan	D.C.	B.S. in Ind Eng. 1958, Pennsylvania State University
B.S. 1958, D.C. Teachers College		Minnick, Dana Wayne
Miller, Walter Clarence	Va	A.B. 1955, Washington College
A.B. 1941, Pennsylvania State University		A.M. 1955, University of Virginia
L.L.B. 1956, The George Washington University		Minnick, Edward Franklin
Miller, Robert Allen	Va	B.E.E. 1957, University of Virginia
B.S. in E.E. 1958, Northeastern University		Minnick, Elizabeth Ann
Miller, Temple Pound	Va	Minnick, George Charles
A.B. in Ed. 1954, Arizona State College, Tempe		B.S. 1954, Nebraska State Teachers College, Kearney
Miller, Robert Bennett	Va	A.M. 1947, Georgetown University
Ph.D. 1951, University of Chicago		Ph.D. 1947, University of Paris, France
Mills, Florence Mae	Ala	Minnick, George Joseph, Jr.
B.S. 1950, Alabama Agricultural and Mechanical College		B.S. in P.E. 1958, Georgetown University
Mills, James F., Jr.	Md	Minnick, James Madison
Mills, James Moses H.	D.C.	A.B. 1947, The George Washington University
Mills, John Lamar	Va	Minnick, Jeanne B.
A.B. 1945, L.L.B. 1950, Emory University		Minnick, John Texas
Mills, Katherine James	D.C.	B.S. 1941, U.S. Naval Academy
A.B. 1950, The George Washington University		

Students Registered

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Misall, Julia Allen			
Misall, Mary Kathleen	D C	Molmeaux, Robert Joseph	D C
Misall, Mary Kathleen	D C	B.S. 1958, Fordham University	
Misall, Mary Kathleen	D C	Molmeaux, Matthew	Md
Misall, Mary Kathleen	D C	B.S. 1957, New York University	
Misall, Mary Kathleen	D C	Molmeaux, Annetta Grange	D C
Misall, Mary Kathleen	D C	A.B. 1958, D. C. Teachers College	
Misall, Mary Kathleen	D C	Molmeaux, John Bromley	Mass
Misall, Mary Kathleen	D C	B.S. 1957, Tufts College	
Misall, Mary Kathleen	D C	M.S. 1951, The George Washington University	
Misall, Mary Kathleen	D C	Molmeaux, Joseph Robert	Pa
Misall, Mary Kathleen	D C	B.S. 1957, Franklin and Marshall College	
Misall, Mary Kathleen	D C	Molmeaux, George	D C
Misall, Mary Kathleen	D C	Molmeaux, Louise Antoinette	Md
Misall, Mary Kathleen	D C	Molmeaux, Gene Hall	Va
Misall, Mary Kathleen	D C	Molmeaux, Thomas Hugh	Va
Misall, Mary Kathleen	D C	B.S. 1956, College of William and Mary	
Misall, Mary Kathleen	D C	Molmeaux, Frances Mae	D C
Misall, Mary Kathleen	D C	A.B. in Ed. 1956, University of North Carolina	
Misall, Mary Kathleen	D C	Molmeaux, Frederick	Va
Misall, Mary Kathleen	D C	B.S. 1951, Georgetown University	
Misall, Mary Kathleen	D C	A.M. 1951, University of Virginia	
Misall, Mary Kathleen	D C	Molmeaux, Daniel Anthony	D C
Misall, Mary Kathleen	D C	Molmeaux, Lee Jay	Calif
Misall, Mary Kathleen	D C	A.B. 1951, The George Washington University	
Misall, Mary Kathleen	D C	Molmeaux, Allen Mandel	Md
Misall, Mary Kathleen	D C	A.B. 1951, The George Washington University	
Misall, Mary Kathleen	D C	Molmeaux, Carol Ann	Va
Misall, Mary Kathleen	D C	Molmeaux, Frank House	Va
Misall, Mary Kathleen	D C	B.S. 1951, Cornell College	
Misall, Mary Kathleen	D C	Molmeaux, Norbert Moore	Md
Misall, Mary Kathleen	D C	B.S. 1954, Howard University	
Misall, Mary Kathleen	D C	M.S. 1951, New York University	
Misall, Mary Kathleen	D C	Molmeaux, John Bromley	Va
Misall, Mary Kathleen	D C	A.B. 1951, Tufts College	
Misall, Mary Kathleen	D C	Molmeaux, Charles John	Md
Misall, Mary Kathleen	D C	Molmeaux, Jerry Chandler	N C
Misall, Mary Kathleen	D C	A.B. 1951, Furman University	
Misall, Mary Kathleen	D C	Molmeaux, Mary Jane	Tenn
Misall, Mary Kathleen	D C	Molmeaux, Gerald Vincent	D C
Misall, Mary Kathleen	D C	A.B. 1951, Howard University	
Misall, Mary Kathleen	D C	A.M. 1951, Columbia University	
Misall, Mary Kathleen	D C	Molmeaux, Patricia Eva	D C
Misall, Mary Kathleen	D C	Molmeaux, Robert Maurice, Jr.	D C
Misall, Mary Kathleen	D C	Molmeaux, Duane Hugh	Va
Misall, Mary Kathleen	D C	A.B. 1951, Columbia College	
Misall, Mary Kathleen	D C	Molmeaux, Henry M. Jr.	N J
Misall, Mary Kathleen	D C	A.B. 1954, Williams College	
Misall, Mary Kathleen	D C	Molmeaux, Lawrence Nelson	Va
Misall, Mary Kathleen	D C	Molmeaux, John F. Jr.	Va
Misall, Mary Kathleen	D C	A.B. 1951, Tulane University	
Misall, Mary Kathleen	D C	Molmeaux, Michael Maxwell	Va
Misall, Mary Kathleen	D C	B.S. 1952, Westminster College	
Misall, Mary Kathleen	D C	Molmeaux, Robert Bruce	Pa
Misall, Mary Kathleen	D C	B.S. 1954, University of Maryland	
Misall, Mary Kathleen	D C	Molmeaux, Robert Bruce	Va
Misall, Mary Kathleen	D C	B.E. 1954, The George Washington University	
Misall, Mary Kathleen	D C	Molmeaux, Stanley Genevieve	Md
Misall, Mary Kathleen	D C	Molmeaux, Allen Frederick	D C
Misall, Mary Kathleen	D C	Molmeaux, Thomas Albert	D C
Misall, Mary Kathleen	D C	A.B. 1951, Williams College	
Misall, Mary Kathleen	D C	Molmeaux, Charles John	Mass
Misall, Mary Kathleen	D C	A.B. 1951, University of New Hampshire	
Misall, Mary Kathleen	D C	Molmeaux, John W.	N C
Misall, Mary Kathleen	D C	Molmeaux, Robert Bruce	Wash
Misall, Mary Kathleen	D C	B.E. 1954, The George Washington University	
Misall, Mary Kathleen	D C	Molmeaux, Richard Henry	Md

Moon, Edward Miller	Va	Morehouse, Lucille Vivian	N.Y.
A.B. 1948, Ohio Wesleyan University		A.B. 1937, The George Washington University	Me.
A.M. 1949, Ohio State University		Morehouse, Peter Gad	D.C.
Mooney, James Edward	D.C.	Moreland, Pascal Harris, Jr.	P.
Mooney, Louise Swartz	Va	Morenko, O. Dorothy	D.C.
Mooney, Madeline Patricia	N.Y.	Morenson, Alice Aycock	Va
Moreno, John Joseph	Va	Morenson, John A.	N.M.
Moreno, Albert Wilson Luce, Jr.	Mo	B.S. in E.E. 1930, U. S. Naval Academy	
Moreno, Arthur Lynn	Va	Moreno, Verone Rexroat	V.
Moreno, Charles Westman	Va	A.B. 1948, The George Washington University	D.C.
Moreno, Corn Elizabeth	Md	Moretti, John, Jr.	
Moreno, Earl Kenneth	Tenn	Moretz, Gary Fred	
A.B. in Govt. 1945, The George Washington University		Morgan, Alice Susan	
Moore, Eleanor Brown	Va	B.S. 1938, University of Maryland	
B.S. in Ed. 1939, Temple University		A.M. 1942, The George Washington University	P.C.
Moore, Geneva Horton	D.C.	Morgan, Anna Marie	Va
B.S. 1940, D. C. Teachers College		A.B. 1923, Nebraska Wesleyan University	P.C.
Moore, Gerald Lee	Md	Morgan, Anne Vesteycke	
B.S. in E.E. 1951, Rose Polytechnic Institute		Morgan, Barbara Capet	W.V.
Moore, Gray Will	Okla.	B.S. 1940, West Virginia Wesleyan College	
A.B. 1948, A.M. 1952, University of Oklahoma		Morgan, Dora Anne	Me.
Moore, Hazel Cartwright	Va	B.S. 1957, West Virginia University	
Moore, Henry Sampson	Ind	Morgan, Eleanor Harpigny	P.C.
Moore, Henry Wadsworth, Jr.	Md	A.M. 1946, Oberlin College	
B.S. 1947, University of Maryland		Morgan, Ethel Wiggall	
A.M. 1948, Yale University		B.S. 1946, George Peabody College	
Moore, Holmes Sumner	Va	Teachers	
A.B. 1942, University of California		A.M. 1949, University of Michigan	M.
Moore, Igor M. Matros	Md	Morgan, George Lawrence, Jr.	W.V.
Moore, James Gerry	D.C.	Morgan, Gordon Jefferson, Jr.	
Moore, James Rossman, Jr.	Va	Morgan, Helen Newton	
B.S. 1977, The George Washington University		Morgan, John Thornton	Over.
Moore, John Curtis	Texas	A.B. in E.E. 1942, B.S. in B.A. 1942, Shepherd's State College	
A.B. 1944, University of Texas		Morgan, Joseph, Peter	P.C.
Moore, John Franklin	D.C.	A.B. 1950, St. Lawrence University	
Moore, John F. Baker	Ind	A.M. 1956, New York University	
Moore, Jim Robert	Va	Morgan, Lester Robert	M.
Moore, Lawrence Anthony, Jr.	Va	B.S. 1954, D. C. Teachers College	T.
Moore, Martha Jean	D.C.	Morgan, Lloyd Linley	
Moore, Mary Elizabeth	Va	B.S. 1954, Davidson	
Moore, Patrick Holmes	Tenn	Morgan, Patricia Ann	W.V.
Moore, Richard Thomas	Va	Morgan, Paul Kruger, Jr.	
Moore, Robert Edmund	Ky	B.S. 1947, Pennsylvania State University	
Moore, Robert Daniel	Va	B.S. 1947, Sidney IV	
Moore, Robert Milton	Ohio	Morgan, Ronald Linn	P.C.
Moore, Ruffin Brown	D.C.	B.S. in E.E. 1941, West Virginia University	
Moore, Stuart F. Moore	Md	Moore, Walter Albert	
Moore, Virginia Frances		A.B. 1948, The George Washington University	
A.B. 1947, Tulane College	Va	Morgan, Richard John	
Moore, Warren Eugene	Md	Morgan, Patrick J.	
Moore, William Buckner	Va	A.B. 1950, American International College	
Moschall, Michael Marling	Columbia	A.M. 1951, University of Minnesota	
Martin, Jameson	D.C.	Morgan, Phil Marlowe	
Martin, Donald Oscar	Va	A.B. 1942, Columbia University	
B.S. 1949, U. S. Military Academy		Morgan, Arthur Thomas	
Martin, Raymond Peter	Md	B.S. 1950, University of New Hampshire	
Martin, Andrew John		Morgan, Ray Linton	
A.P. in Govt. 1941, The George Washington University		A.B. 1947, Connecticut College	
Martin, Thomas Francis	D.C.	Woods	
B.S. 1943, Maryland State Teachers College, Pikesville		Morgan, James Frederick	
Martin, Woodford Mary	N.H.	B.S. in E.E. 1957, Virginia Polytechnic Institute	
B.S. 1946, University of New Hampshire		Morgan, Howard William	
Martin, Gene	D.C.	Morgan, Lewis R. Lewis	
Martinson, Thomas	Md	Morgan, Thomas Linton	
B.S. 1949, Maryland College		Morgan, Thomas Linton	
Morehouse, Frank Julian	Texas	B.S. 1955, University of Arizona	
B.S. in E.E. 1948, University of Texas			

Students Registered

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Winn, Harry Kenneth A.B. 1900, R.E.L. 1906, The George Washington University	D.C.	Mosman, Kenneth Freeman A.B. A.M. 1928, The George Washington University	Va.
Winn, Robert Henry B.S. 1925, University of Oregon	D.C.	Moss, David Michael	D.C.
Winn, William Blackmer M.A. 1924, University of Oregon	Idaho	Moss, Gertrude Elizabeth	Md.
Winn, Gary Dean M.A. 1924, University of Oregon	Ala.	Moss, Rens L.	Idaho
Winn, Thomas Henry M.A. 1924, University of Oregon	D.C.	A.B. 1927, Brigham Young University	
Winn, Donald Louis M.A. 1924, University of Oregon	Md.	Moss, Robert DuWitt	Md.
Winn, Robert Louis M.A. 1924, University of Oregon	D.C.	Moss, Thayer David	Va.
Winn, John Michael A.B. 1924, University of Oregon	Va.	B.S. & Ed. 1917, Bucknell University	
Winn, James Van Wier A.B. 1924, University of Oregon	Pa.	L.L.B. 1920, Georgetown University	
Winn, Robert and William Smith A.B. 1924, University of Oregon	D.C.	Mossman, George Joseph B.S. & L.E. 1927, St. Louis University	D.C.
Winn, Robert A.B. 1924, University of Oregon		Mossman, Alfred Joseph	D.C.
Winn, Robert A.B. 1924, University of Oregon		Mossman, Edward Arthur	Va.
Winn, Robert A.B. 1924, University of Oregon		Mossman, Victor Thompson	Va.
Winn, Robert A.B. 1924, University of Oregon		Mossman, Donald Russell	Pa.
Winn, Robert A.B. 1924, University of Oregon		B.S. 1927, Pennsylvania State University	
Winn, Robert A.B. 1924, University of Oregon		Mossman, Peter George	D.C.
Winn, Robert A.B. 1924, University of Oregon		Mossman, James Austin	D.C.
Winn, Robert A.B. 1924, University of Oregon		B.S. & L.E. 1928, University of Connecticut	
Winn, Robert A.B. 1924, University of Oregon		M.S. & P.E. 1922, Lehigh University	
Winn, Robert A.B. 1924, University of Oregon		Moss, Thomas Matthew	Wa.
Winn, Robert A.B. 1924, University of Oregon		B.S. 1927, University of Wisconsin	
Winn, Robert A.B. 1924, University of Oregon		Moss, Edward Louis	Va.
Winn, Robert A.B. 1924, University of Oregon		B.S. 1927, Southwestern Louisiana Institute	
Winn, Robert A.B. 1924, University of Oregon		Mossman, Ernest Stanley	D.C.
Winn, Robert A.B. 1924, University of Oregon		Mossman, Richard Freeman	D.C.
Winn, Robert A.B. 1924, University of Oregon		A.B. 1924, University of South Dakota	S.D.
Winn, Robert A.B. 1924, University of Oregon		Mossman, Sara Eliza	D.C.
Winn, Robert A.B. 1924, University of Oregon		A.B. 1923, West Virginia State College	
Winn, Robert A.B. 1924, University of Oregon		Mossman, Mary Harriet	Pa.
Winn, Robert A.B. 1924, University of Oregon		Mossman, James Henry	Texas
Winn, Robert A.B. 1924, University of Oregon		Mossman, William Allen	Va.
Winn, Robert A.B. 1924, University of Oregon		Mossman, Peter George	Md.
Winn, Robert A.B. 1924, University of Oregon		B.S. & P.E. 1923, Georgetown University	
Winn, Robert A.B. 1924, University of Oregon		Mossman, Oliver Russell	D.C.
Winn, Robert A.B. 1924, University of Oregon		B.S. 1927, St. Francis College	
Winn, Robert A.B. 1924, University of Oregon		Moss, Eugene	D.C.
Winn, Robert A.B. 1924, University of Oregon		Moss, Michael	D.C.
Winn, Robert A.B. 1924, University of Oregon		Moss, Mary Faye-Gee	D.C.
Winn, Robert A.B. 1924, University of Oregon		Mossman, Charles Vincent	D.C.
Winn, Robert A.B. 1924, University of Oregon		Mossman, Patricia Lee	Va.
Winn, Robert A.B. 1924, University of Oregon		A.B. 1927, College of William and Mary	Va.
Winn, Robert A.B. 1924, University of Oregon		Mossman, Stephen Brown	Md.
Winn, Robert A.B. 1924, University of Oregon		Mossman, John Lawrence	
Winn, Robert A.B. 1924, University of Oregon		A.B. 1924, Antiochian College	
Winn, Robert A.B. 1924, University of Oregon		A.M. 1928, Catholic University of America	
Winn, Robert A.B. 1924, University of Oregon		Mossman, James Edward	Va.
Winn, Robert A.B. 1924, University of Oregon		A.B. 1921, St. Anselm's College	
Winn, Robert A.B. 1924, University of Oregon		Mossman, Alfred John	Md.
Winn, Robert A.B. 1924, University of Oregon		Mossman, Albert Vincent	Pa.
Winn, Robert A.B. 1924, University of Oregon		A.B. 1924, Mount St. Mary's College	
Winn, Robert A.B. 1924, University of Oregon		Mossman, Arthur Joseph	Md.
Winn, Robert A.B. 1924, University of Oregon		B.S. 1925, Western College	
Winn, Robert A.B. 1924, University of Oregon		Mossman, Abraham Herschel	Md.
Winn, Robert A.B. 1924, University of Oregon		Mossman, Clarence	D.C.
Winn, Robert A.B. 1924, University of Oregon		Mossman, Charles Henry	N.Y.
Winn, Robert A.B. 1924, University of Oregon		Mossman, David Russell	Pa.
Winn, Robert A.B. 1924, University of Oregon		A.B. 1924, Southern College	
Winn, Robert A.B. 1924, University of Oregon		Mossman, Kenneth Marie	N.Y.
Winn, Robert A.B. 1924, University of Oregon		A.B. & Ed. 1924, The George Washington University	
Winn, Robert A.B. 1924, University of Oregon		Mossman, Louis Frederick	Va.
Winn, Robert A.B. 1924, University of Oregon		Mossman, Martha Joseph	Va.
Winn, Robert A.B. 1924, University of Oregon		Mossman, David Franklin	D.C.
Winn, Robert A.B. 1924, University of Oregon		A.B. 1921, Williams College	
Winn, Robert A.B. 1924, University of Oregon		B.S. & M.E. 1914, Massachusetts Institute of Technology	

Muir, Frederic Wilson B.S. 1918, U. S. Naval Academy	Va	Murphy, Eugene David A.B. 1928, Pace College	Va
Muir, William Angus	D.C.	Murphy, Frances Margaret Murphy, Gordon Anthony	D.C.
Mullock, James Browning, Jr. Mulford, Roger Dean B.S. 18 Apr. 1926, Cornell University	N.M.	Murphy, Howard Owen Murphy, Linton Dennis	Va
Mulland, John Herbert B.S. 1927, University of Illinois	Va	Murphy, James Lee A.B. 1927, University of Maryland	Va
Munoz, Helen Collier	Md.	Murphy, Joan Dorothy A.B. 1929, Trinity College	Va
Murkey, Margaret Kinbrough B.S. 16 Ed. 1922, Mary Washington College	Va	Murphy, John Robert A.B. 1929, University of Southern California	Va
Muller, John Joseph B.S. 1921, Georgetown University	D.C.	Murphy, John L. Lewis, Jr. B.S. 1916, 1917, Georgia Institute of Technology	Va
Mullins, Alice Denney B.S. 1914, New York State Teachers College, Buffalo	Md.	Murphy, Joseph Patrick A.B. 1926, U. S. M. 1922, The George Washington University	Va
Mullen, Almaria Dismock B.S. 1918, D.C. Teachers College	D.C.	Murphy, John Hoover B.S. 1922, Massachusetts Bible College, Northampton	Md.
Mullen, Gail Shepherd B.S. 1911, D.C. Teachers College	Va	Murphy, Lester D'Neil B.S. 1927, Knoxville College	Va
Mullen, Ronald Eugene A.B. 1928, Marynet College B.D. 1928, Northern Baptist Theological Seminary	Ill.	Murphy, Margaret Mary Murphy, Marie Claire Vauzel	Va
Mullens, Barbara Nelson A.B. 1922, University of Wyoming	D.C.	Murphy, Patricia E. Murphy, Robert Edmund	Va
Multer, Bruce Chadwick Muller, Ping-wei	Va	Murphy, Rose Marie Beyer Murphy, Vernon Karlson	Va
Mullins, Carol Louise Mullins, George Gordon A.B. 1918, Hamline University	Va	Murray, William Joseph Murray, Edward Patrick	Va
Mullins, Jessie Fitch A.B. 1912, A.M. 1918, Ber. Alm. 1928, The George Washington University	Va	Murray, James Thomas, Jr. A.B. 1929, Lebanon Valley College	Va
Mullins, John Joseph, Jr. B.S. 1914, University of Connecticut	Mass.	Murray, James Gustaf B.S. 1912, M.E. 1928, University of Washington	Va
Mulvey, Frederick A.B. 1914, A.M. 1918, A.M. 1920, The George Washington University	D.C.	Murray, Joseph Gerard B.S. 1914, Newark College of Engineering	Va
Mulvihill, Mary Grace Mulvihill, Walter J. B.S. 1918, University of Connecticut	Md.	Murray, John Patrick B.S. 1918, Georgetown University	Va
Mullin, David Russell Munford, Roger M. Munro, Ralph Philip	Md.	Murray, Katie Anne A.B. 1928, The George Washington University	Va
Munro, Neil Allen Munro, Robert Earl Munro, Robert Walter	D.C.	Murray, Linda Ann Murray, Malcolm Hublen	Va
Munro, Robert Hunter Munroe, Lewis Joseph Munroe, George Joseph	Mass.	Murray, Mary Elizabeth B.S. 1914, M.S. 1914, University of Illinois	Va
Munroe, Marlene Marie A.B. 1914, Ed. 1914, The George Washington University	Va	Murray, Sarah Betsy B.S. 1928, Carnegie Institute of Technology	Va
Munroe, Frederick Alexander B.S. 1921, University of Tennessee	D.C.	Murray, Robert Gene B.S. 1928, University of Kansas	Va
Munroe, Frank Joseph Munroe, John Frederick, Jr. B.S. 1927, Beaver College	Pa.	Murray, Mary Lee Murray, Eugene Anne	Va
Murphy, Albert Leonard A.B. 1923, Boston College	Md.	Murray, Robert Edward Murray, Robert	Va
Murphy, Barbara Ann B.S. 1924, Tufts University	D.C.	Murray, Robert Granville Murray, Joseph Theodore	Va
Murphy, Benjamin Francis B.S. 1921, Georgetown University	Del.	Murray, Ruth Roberts A.B. 1928, West Virginia University	Va
Murphy, Catherine Teresa Murphy, Charles Francis A.B. 1926, Stanford University	D.C.	Murray, Stanley Irving Murray, Carl Wilson	Va
	S.C.	Murray, Emory and Henry College	Va

Murray, Richard Andrew B.S. 1964, University of Virginia	Va	Naple, Stanley Carroll, Jr. B.S. 1958, Dickinson College	Md
Murphy, Alfred Vincent B.M.E. 1960, Rensselaer Polytechnic Institute	N.Y.	M.S. 1960, The George Washington University	
Murphy, Clifford Frederick B.S. 1961, University of Cincinnati	Ohio	Napores, Myron C. B.S. 1951, University of Scranton	Va.
Murphy, Jamal E. B.S. 1965, Ohio State University		Nash, John David Nash, Sandra Kay	Va. D.C.
Murphy, Stanley Page A.M. 1965, University of Kansas	D.C.	Nason, Jack Stanford, Jr. Nason, Loretta Faye	Va. Va.
Murphy, George Michael M.S. 1964, University of California	Va	Nazryyallah, Abdul Bayan Mubnaba B.Med. and Surg. 1953, University of Libya, Pakistan	Pakistan
Murphy, Albert Joseph M.S. 1964, Georgia Institute of Technology	Md	Nazmi, Raza Jinnat Nazmi, Roshid Nazmi, Jr. B.S. 1954, West Liberty State College	Va. W.Va.
Murphy, Charles Hammett A.B. 1964, University of North Carolina	D.C.	Nazmi, Rafiq Anwar Nazmi, Rafiq	Venezuela D.C.
Murphy, John Michael M.S. 1964, Kent State University	D.C.	Nazmi, Frank Joseph Nazi, Gordon Helwig	D.C. D.C.
Murphy, Harold A.B. 1964, The George Washington University	Ohio	Nazi, Anne Robinson Nazi, Sam Lee	D.C. D.C.
Murphy, Jack A. B.S. 1961, U.S. Naval Academy	D.C.	Nazi, Sam Lee B.S. 1951, Illinois Institute of Technology	
Murphy, John Morgan M.S. 1964, University of Maryland	Md	Nazmi, Peter Vincent, Jr. B.S. 1954, Case Institute of Technology	D.C.
Murphy, John Morgan M.S. 1964, University of Maryland	Md	Nazmi, Sarah Seraphina Natal, Linda Lucille	D.C. Va.
Murphy, John Morgan M.S. 1964, University of Maryland	D.C.	Nathanson, James Edgar A.B. 1954, Harvard University	Mass.
Murphy, John Morgan M.S. 1964, University of Maryland	D.C.	Nathanson, Rae Judy Nathanson, Susan Louise	D.C. Ohio
Murphy, John Morgan M.S. 1964, University of Maryland	D.C.	Nathanson, Susan Louise Nazi, Nord Gussner	D.C. D.C.
Murphy, John Morgan M.S. 1964, University of Maryland	Va	Nazi, Robert Joseph Nazi, Mary Joseph	D.C. D.C.
Murphy, John Morgan M.S. 1964, University of Maryland	Va	Nathanson, Katherine Teresa Nathanson, Eugene George	Pa. Md
Murphy, John Morgan M.S. 1964, University of Maryland	D.C.	Nathanson, Eugene George Nathanson, Phyllis	Thailand
Murphy, John Morgan M.S. 1964, University of Maryland		Nathanson, Phyllis H.B. 1955, University of Tennessee	
Murphy, John Morgan M.S. 1964, University of Maryland	Md	Nash, Mary Beatrice A.B. 1960, The George Washington University	D.C.
Murphy, John Morgan M.S. 1964, University of Maryland	Va	Nash, Ron Vernon A.B. 1962, West Virginia Wesleyan College	D.C.
Murphy, John Morgan M.S. 1964, University of Maryland		A.M. 1961, Ph.D. 1966, Ohio State University	
Murphy, John Morgan M.S. 1964, University of Maryland		Nash, Milton Nash, Donald William	Iran D.C.
Murphy, John Morgan M.S. 1964, University of Maryland		B.S. 1958, Oregon State College	
Murphy, John Morgan M.S. 1964, University of Maryland		Nash, Edna Henry B.S. 1951, Pennsylvania State University	Md
Murphy, John Morgan M.S. 1964, University of Maryland		Nash, Philip Stanley A.B. 1954, University of Colorado	Va.
Murphy, John Morgan M.S. 1964, University of Maryland		Nash, Raymond Joseph Nash, William Albert	Calif. Md
Murphy, John Morgan M.S. 1964, University of Maryland		A.B. 1955, University of Maryland	
Murphy, John Morgan M.S. 1964, University of Maryland		Nash, William Alfred B.S. 1954, A.M. 1957, Ph.D. 1961, The George Washington University	Va.
Murphy, John Morgan M.S. 1964, University of Maryland		Nash, William L. B.S. 1951, Yale University	Va.
Murphy, John Morgan M.S. 1964, University of Maryland		Nash, William M., Jr. A.B. 1958, University of Alabama	Ala.
Murphy, John Morgan M.S. 1964, University of Maryland		Nash, Clara Jane Nash, James Randolph	D.C. Va.
Murphy, John Morgan M.S. 1964, University of Maryland		Nash, Talbot M. B.S. 1958, Georgetown University	Md

N

Needham, Roger Everett	Md	Neshem, Ellen Deck	D.C.
B.S. 1916, Massachusetts Institute of Technology		A.B. 1909, Cornell University	N.Y.
Neel, Edward O'Donnell	D.C.	Nesher, Shalom	D.S.
Neel, Joan	Md	B.S. 1936, Brooklyn College	
Neel, Edward Victor	D.C.	Nesher, Abraham Anthony	Pa
A.B. 1923, Harvard University		A.B. 1914, A.M. 1916, LaSalle College	
Near, Joe	D.C.	Nesher, John Joseph	Pa
Near, John Henry	Ill	A.B. 1927, Yale University	W.Va
B.S. in E.E. 1938, Bradley University		Nesher, Leonard William	
Neel, Rosella Gail	Va	Nesher, Mary Helen	D.C.
Nellis, George Joseph	N.J.	A.B. 1910, A.M. 1932, West Virginia University	Md
B.S. 1917, Yale University		Nesher, Murray Earl	
Neild, Alton Bayne, Jr.	Md	Nesher, Kenneth William	
B.S. in M.E. 1941, Johns Hopkins University		B.S. in M.E. 1939, University of California	
Neill, Burton Ledman	D.C.	Nesher, Fay	
Neimark, Shoshan Lew	Ohio	Nesher, John Earl	
B.S. in C.E. 1937, Carnegie Institute of Technology		B.S. 1936, Hamilton College	Va
Nesher, Helen Louise	Md	Ph.D. 1948, Wayne State University	
Nesher, Mark Edward	Md	Nesher, Margaret Emma	Md
B.S. 1942, Maryland State Teachers College, East Shore		B.S. 1937, University of California	Md
Ed.M. 1946, University of Maryland		Nesher, Thomas Hark	
Nelson, Anna Kristin	Va	Nesher, Fred	
A.B. 1944, A.M. 1946, University of Oklahoma		Nesher, George Wallace	Md
Nelson, David Hardy	D.C.	B.S. in E.E. 1932, University of Maryland	
B.S. 1937, University of California		Nesher, John Daniel, Jr.	
Nelson, Dorothy Virginia	Va	Nesher, Otto Antonia	
Nelson, Ida Christina	Va	B.S. in Civil Eng. 1933, St. Louis University	
A.B. 1937, A.M. 1939, University of Oklahoma		Nesher, Harry Van, Jr.	
Nelson, Frank Marshall	Pa	Nesher, Dorothy R. Smith	
B.S. 1941, U.S. Naval Academy		Nesher, Alex Moser	
B.S. in E.E. 1948, Massachusetts Institute of Technology		Nesher, Thomas Jay	
Nelson, Harold W. Wood	Va	Nesher, Joseph Taylor	
Nelson, James Trevellick	Md	B.S. 1917, M.S. 1927, University of Illinois	
Nelson, John Timothy	Md	Nesher, Jack Fisher	
A.B. 1934, Howard University		Nesher, John David	
Nelson, John William	D.C.	Nesher, Marshall John, Jr.	
A.B. 1931, Yale University		Nesher, Alex Rosam	
A.M. 1934, Yale University		Nesher, Edward John	
Nelson, John Roy	Va	B.S. 1940, U.S. Naval Academy	
A.B. 1934, University of California		Nesher, Anthony M. J.	
Nelson, Leon Leonard	D.C.	A.B. 1935, Oberlin College	
Nelson, Madeline R.	Wyo	Nesher, Lawrence C.	
Nelson, Mary Emma	Va	B.S. 1932, New York State Teachers College, Buffalo	D.C.
Nelson, Robert Edward, Jr.	Ohio	A.M. in Ed. 1947, The George Washington University	
A.B. 1916, Youngstown University		Nesher, Mariette Hin	Va
Nelson, Salim A. A.	Va	A.B. M.A. 1958, Oberlin College	Md
B.S. 1944, Nazareth College		Nesher, Sarah Robinson	
Nelson, Sandra	N.J.	Nesher, Maria Rose	
A.B. 1918, Lebanon Valley College		A.B. 1934, Oberlin College	
Nelson, Stanley Burton	Md	Nesher, Peter Franklin	
Nelson, Thomas Preston	Pa	Nesher, Alan Julian	
B.S. in C.E. 1936, Lafayette College		Nesher, Ann Lee	
Nelson, W. Earl Alderson	D.C.	B.Mus. Ed. 1937, Howard University	
Nelson, William Eugene	Md	Nesher, Henry B.	
Nelson, William Raymond	Ohio	A.B. 1931, Emmanuel Missionary College	
B.S. 1935, Ohio State University		Nesher, David Charles	
Nelson, Charles	D.C.	Nesher, Hec, Gennick	
Nesher, Helen Louise	Md	A.B. 1937, Columbia University	
Nesher, Mark Edwin	Va	A.M. 1947, Columbia University	
Nesher, Ann	Ark	Nesher, Henry Carl	
Nesher, Clementine Mitchell	S.C.	B.S. 1936, University of Illinois	
B.S. 1916, University of Wisconsin		Nesher, Long Emmerson	
Nesher, John	Md	A.B. 1937, The George Washington University	
A.B. 1932, The George Washington University		Nesher, Paul Edward	

Students Registered

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Norman, Ronald Alan	Md.	Nielsen, Rolf Melius	Md.
Norman, Stephen Jerome	D.C.	B.S. 1943, Washington State College	
Norman, William Edwin	Va.	A.B. 1947, St. Cloud College	
Norton, David Lloyd		M.S. 1946, Pennsylvania State University	
Norton, Richard Allen	Va.	Norton, Robert Gordon	D.C.
Noy, James Howard	D.C.	B.S. 1947, Virginia Polytechnic Institute	
Noy, Walter Roger	Va.	Nometz, Jack	D.C.
Nye, John Y. University	Va.	Norris, Morris Howard	Va.
Nye, Frederick Schenck		B.S. 1941, University of Tennessee	
Nye, Robert	Calif.	Nord, Roy Christopher	D.C.
Nye, Lennai	D.C.	Norris, Jerry Harrison	N.Y.
B.S. 1945, Mount St. Scholastica	Vietnam	B.S. 1941, Cornell University	
Nye, L. Dow III		M.B.A. 1947, New York University	
B.S. 1941, University of	Ill.	Norlander, Elton Lee	Va.
Nye, Janice Louise		Nord, Harold	Md.
Nye, Patricia Ann	D.C.	B.S. 1947, Colorado State College	
B.S. 1948, San Francisco State	Calif.	M.S. 1946, Oregon State College	
Nye, Charles Robert		Noma, Henry Mason	Hawaii
B.S. 1945, University of New Mexico	N.M.	A.B. 1941, University of Hawaii	
Nye, Charles Robert		Nora, William Lynn	Va.
A.B. 1946, University of	Nev.	B.S. 1948, Brigham Young University	
Nye, Charles Robert		Norling, Clarence William, Jr.	Va.
A.B. 1946, University of		B.B.A. 1946, Texas Agricultural and Mechanical College	
Nye, Charles Robert		Noble, Thomas Louise	D.C.
Nye, Charles Robert		Noble, John Francis	Va.
Nye, Charles Robert		Noble, Mary Lane	Md.
Nye, Charles Robert		Noble, William Anthony	W.Va.
Nye, Charles Robert		Noble, Frank J. Patrick	Calif.
Nye, Charles Robert		Noble, Clifford Edward	Md.
Nye, Charles Robert		B.S. 1946, Massachusetts Institute of Technology	
Nye, Charles Robert		Noble, Mary Margaret	D.C.
Nye, Charles Robert		Noble, Robert Henry	Va.
Nye, Charles Robert		Noble, Roderic Loring	Va.
Nye, Charles Robert		Noble, John Edward	D.C.
Nye, Charles Robert		Noble, John Andrew	Va.
Nye, Charles Robert		A.B. 1944, Grinnell College	
Nye, Charles Robert		Noble, Joseph Charles	Md.
Nye, Charles Robert		Noble, Carl Anne	D.C.
Nye, Charles Robert		Noble, Carl Alfred	Md.
Nye, Charles Robert		A.B. 1947, University of Michigan	
Nye, Charles Robert		Noble, Arthur Charles	Va.
Nye, Charles Robert		B.S. 1947, Case Institute of Technology	
Nye, Charles Robert		Noble, Frank Rex	Va.
Nye, Charles Robert		A.B. 1944, Northwestern University	
Nye, Charles Robert		Noble, John Robert	N.D.
Nye, Charles Robert		A.B. 1941, Mount St. Scholastica	
Nye, Charles Robert		A.M. 1941, University of Minnesota	
Nye, Charles Robert		Noble, Robert Earl	D.C.
Nye, Charles Robert		Noble, John Lee	Md.
Nye, Charles Robert		Noble, Mary Wynn	Md.
Nye, Charles Robert		M.A. 1947, Wheaton College	
Nye, Charles Robert		Noble, Nancy Ann	D.C.
Nye, Charles Robert		Noble, John Lee	Va.
Nye, Charles Robert		A.B. 1941, Wheaton College	
Nye, Charles Robert		B.S. 1941, Pennsylvania State University	
Nye, Charles Robert		Noble, Mary Ann	Va.
Nye, Charles Robert		A.B. 1941, Wheaton College	
Nye, Charles Robert		A.M. 1941, University of Minnesota	
Nye, Charles Robert		Noble, Robert Earl	D.C.
Nye, Charles Robert		A.B. 1941, University of Virginia	
Nye, Charles Robert		Noble, William M.	D.C.
Nye, Charles Robert		Noble, Howard George	Md.
Nye, Charles Robert		B.S. 1941, Case Institute of Technology	
Nye, Charles Robert		Noble, Thomas Charles	Va.
Nye, Charles Robert		Noble, Frederick Theodore	D.C.

Orr, Robert Hutchinson	Va	Overs, Kathleen	Mo
B.S. in A.E. 1948, University of Michigan		A.B. 1968, University of Toronto, Canada	Pa
Orr, Roma	D.C.	Oversen, John Anthony	Pa
Ortega, Augusto Rada	Bolivia	Oversen, Arnold Alexander III	Pa
Ortega, George Alambra	D.C.	B.S. in C.E. 1954, Bucknell University	Pa
B.S. 1948, Philippine Military Academy		Owen, Barbara Jesse	Pa
M.S.E. 1955, Texas Agricultural and Mechanical College		Owen, John Clements, Jr.	Pa
Ortega, Lourdes Gomez	D.C.	A.B. 1955, Virginia Military Institute	Pa
Ostea, Omar E.	Venezuela	Owen, Leslie Eugene	Pa
Ostea, Valma Idalia	Cuba	Owen, William Edward	Pa
Oster, Juan Gomez	Philippines	B.M.E. 1955, Alabama Polytechnic Institute	Pa
B.S.C. 1950, Far Eastern University, Philippines		Owen, William Evan	D.C.
		A.B. in Govt. 1958, The George Washington University	Pa
Orton, Elton Smith	N.Y.	Ozard, Barbara Scott	Pa
A.B. 1955, Cornell University		A.B. 1957, Ohio State University	Pa
Orva, Harold Homick	D.C.	Ozard, Ivor	Pa
B.S. 1948, Georgia College		A.B. 1954, Ohio State University	Pa
M.D. 1952, Columbia University		Ozard, Harry James	Pa
Ozato, Satoshi	Hawaii	Ozawa, Jun	Pa
Ozawa, Etsuro	D.C.	B.S. 1949, Northwestern University	Pa
A.B. 1952, University of California		M.S. 1956, The George Washington University	Pa
Ozburn, Edgar George	Va.	Ozawa, Vance Iwao	Pa
B.S. 1944, U.S. Naval Academy		B.S. 1955, The George Washington University	Pa
A.M. 1948, Stanford University		Ozler, William Dale	Pa
Ozburn, James McClain	Va.	B.S. in B.A. 1958, Ohio State University	Pa
B.S. 1937, M.S. 1939, University of Maryland		Ozler, Joseph Edward	Pa
Ozburn, Morris Edwin	Md.	Ozment, Elizabeth Lee	Pa
Ozburn, Ruth Helen	Va.	Ozment, Edmund Peter	Pa
B.S. in Ed. 1943, University of Minnesota		Ozment, Herbert	Pa
A.M. in Ed. 1946, The George Washington University		A.B. 1952, New York University	Pa
Ozburn, Gerald Lynn	Va	A.M. 1957, Temple University	Pa
Ozburn, James Alan	Md.	Ozment, Melmet	Pa
Ozburn, Paul Albert	D.C.		Pa
Ozburn, Deena Sholey	D.C.		Pa
Ozburn, Elaine Ivy	Pa.		Pa
Ozburn, Anna Delores	Va.		Pa
Ozburn, Patricia Williams			Pa
A.B. 1950, The George Washington University			Pa
Ozburn, Robert M.	Idaho		Pa
B.S. in Phys. 1950, Idaho State College			Pa
Ozburn, Elizabeth Mills	Texas		Pa
B.S. 1949, U.S. Naval Academy			Pa
M.S. in E.E. 1950, Pacific University			Pa
Ozburn, Laura Sweeney	Va.		Pa
B.S. 1955, Pennsylvania State Teachers College, Mansfield			Pa
Ozburn, Robert	D.C.		Pa
Ozburn, Joe Jay	N.Y.		Pa
Ozburn, John Lawrence	D.C.		Pa
A.B. 1954, State University of Iowa			Pa
M.F.A. 1959, Columbia University			Pa
Ozburn, Marie Anna	D.C.		Pa
Ozburn, Rose H.	D.C.		Pa
A.B. 1950, The George Washington University			Pa
Ozburn, Lloyd Hearn Edward	Mo		Pa
A.B. 1949, University of Cincinnati			Pa
A.M. in Govt. 1949, The George Washington University			Pa
Ozburn, Joseph Constant, Jr.	La		Pa
B.S. 1957, Louisiana State University and Agricultural and Mechanical College			Pa
Ozburn, William George, Jr.	D.C.		Pa
Ozburn, Robert Lewis	Va.		Pa
Ozburn, Nancy Rose, Jr.	Mo		Pa

Students Registered			
John S. Ness			
John S. Water, Jr.	Mid	Papadimitriou, John Nicholas	Va
John S. Lewis	Vt	A.B. 1935, University of Delaware	
John S. Smith	D.C.	11 B. 1938, The George Washington	
John S. Smith	Ill.	University	
John S. Smith		Papp, Frank, Jr.	N Y
John S. Smith		A.B. in Govt. 1947, The George	
John S. Smith	N C	Washington University	
John S. Smith		Pappas, Alexander J.	W Va
John S. Smith		A.B. 1947, Salem College	
John S. Smith	D.C.	A.M. 1948, Boston University	
John S. Smith	Va	Pappas, Gary John	S C
John S. Smith	Wis	B.S. 1946, University of Illinois	
John S. Smith		Pappas, Leonard James	Fla
John S. Smith		Pappas, Thomas A.	Mid
John S. Smith		B.S. 1941, St. Louis University	
John S. Smith		A.M. 1944, Washington University	
John S. Smith		Papadakis, Chrysis John	Mid
John S. Smith		B.S. in M.E. 1946, Northeastern	
John S. Smith		University	
John S. Smith	Korea	Papadakis, Nicholas	
John S. Smith	D.C.	A.M. 1947, University of Virginia,	D.C.
John S. Smith	N J	Lynchburg	
John S. Smith	Mid	Parker, Marjorie Jean	Va
John S. Smith	D.C.	Parker, Robert Franklin	Phosphors
John S. Smith	Pa	Parker, Ross Johnson	D.C.
John S. Smith	D.C.	B.S. 1947, D.C. Teachers College	
John S. Smith		Park, Betty Gene	Mid
John S. Smith	MI	Park, Ching Mo	Korea
John S. Smith	D.C.	B.F. 1944, Seoul National University,	
John S. Smith		Korea	
John S. Smith	Va	Park, Blue Lee	Korea
John S. Smith		Park, Lu, Heng	Korea
John S. Smith		Park, Sung Chul	Korea
John S. Smith	W V	Parker, Charles Brand, Jr.	D.C.
John S. Smith	D.C.	Parker, James Emerson	Va
John S. Smith	Va	Parker, Lee, Leonard	N J
John S. Smith	Mid	Parker, Paul Monroe	Va
John S. Smith	D.C.	Parker, Stanley	
John S. Smith		B.S. in Ed. 1946, 1948, Lafayette	
John S. Smith	D.C.	College	
John S. Smith	Va	Parker, Donald George	Va
John S. Smith		Parker, William James	D.C.
John S. Smith	Oreg	A.B. 1946, Oregon State College	
John S. Smith	D.C.	Parker, James London	D.C.
John S. Smith	D.C.	Parker, James Harriet	Pa
John S. Smith	Pa	Parker, Henry Michael	Pa
John S. Smith	Va	B.S. 1947, University of Pittsburgh	
John S. Smith		Parker, John Alfred, Jr.	D.C.
John S. Smith		Parker, John Stuart	D.C.
John S. Smith		B.S. 1947, The George Washington	
John S. Smith		University	
John S. Smith		Parker, Lorraine Mortimer	D.C.
John S. Smith		Parker, Nicholas	D.C.
John S. Smith	Mid	B.S. 1947, S. M. Mary Academy	
John S. Smith		Parker, Ralph Lloyd	N H
John S. Smith		A.B. 1946, University of New	
John S. Smith		Hampshire	
John S. Smith	Va	Parker, Robert William	Va
John S. Smith	Formosa	Parker, Ruth Taylor	Va
John S. Smith	Pa	Parker, Stanley Harold	Va
John S. Smith	Mid	B.S. in C.E. 1947, College of the	
John S. Smith		City of New York	
John S. Smith	N J	Parker, Virginia Mae	D.C.
John S. Smith		Parham, Allen Eugene	Mid
John S. Smith		Parham, Martin Martin	Va
John S. Smith	Del	Parker, Philip James, Jr.	Va
John S. Smith		Parker, John Scott	Va
John S. Smith		Parker, Kenneth William	Va
John S. Smith		Parker, Louis Perry	Va
John S. Smith		A.B. 1946, University of California	
John S. Smith		at Los Angeles	
John S. Smith		Parker, Paul Campbell	Mo
John S. Smith		Parker, Lawrence Boyd	Va

Parmenter, Patricia Eloise	D.C.	Patterson, William Henry, Jr.	
B.S. 1962, Kansas State Teachers College		Phelps, Joseph Charles	N.Y.
Parsons, Mansour	Iran	A.B. 1968, Rutgers University	
Parsons, Stanley Joseph	D.C.	Planton, Charles Thomas	
B.M.E. 1974, College of the City of New York		A.B. 1962, Duke University	
Pattee, Martin Lewin	Md.	E.D.M. 1968, University of Virginia	
Pattee, Edward Lee	Va.	Pau Khurchin, Stephen	
Pattee, Elsie	Va.	Paugh, Roy Leon	
Patry, Barbara Angela	D.C.	Paul, Alan Gilbert	
Patry, Barbara Oneida	Va.	B.M.E. 1966, Rensselaer Polytechnic Institute	
Patton, Douglas Tinsart	Mt.	Paul, Albert Leon	
Patton, Eugene Alan	D.C.	B.S. 1948, Temple University	
Patton, Imogene Newman	D.C.	A.M. 1956, University of Pennsylvania	
B.S. 1942, North Texas State College		Paul, Walter Mar	
Patton, John Allen, Jr.	Va.	Patton, Kenneth Herman	
Patton, Margaret Marler	D.C.	A.B. 1967, St. Olaf College	
Patton, Talbot Lyman	D.C.	Patton, Norman Clarence	
B.S. at H.L. 1967, The George Washington University		L.B. 1966, The George Washington University	
Patson, Wally	Art.	Pauls, Charles Haven	
A.B. 1946, Knox College		B.S. 1967, Georgia Institute of Technology	
Patte, Wayne Augustus, Jr.	D.C.	Pava, Arden	
A.B. 1943, University of Georgia		Pava, Roma L.	
Pattardie, Frances Jane	D.C.	Pavak, Irving Jay	
A.B. 1934 B.S. & L.S. 1941, University of Illinois		Pavelski, Walter Eugene	
A.M. 1949, University of Chicago		B.S. 1966, Case Institute of Technology	
Patel, Paula Frances	D.C.	Pavony, Donald E.	
Patel, Darlene Beth	N.J.	Pawlock, John Edward	
Pastor, William Thomas	Md.	B.S. 1964, University of New Hampshire	
Pastorella, George Lawson		Paxon, Roy H., Jr.	
B.S. 1958, University of Maryland		Paxson, Robert Owen	
Patterson, Arnaldo	Nicaragua	A.B. 1964, Washington and Lee University	
Doctor of Law 1968 National University of Nicaragua		Payer, Albert Alvin	
Pate, Leonard Abram	D.C.	A.B. 1947, The George Washington University	
A.B. 1947, A.M. 1961, Brooklyn College		Payne, Robert Marr	
Patterson, Andrew Joseph, Jr.	Va.	B.S. 1964, Brigham Young University	
B.E.E. 1972, Brooklyn Polytechnic Institute		Pelham, Anna	
Patten, William Konstantinos	D.C.	Peasley, Luban	
Pattinson, Jerome Robert	Pa.	A.B. 1964, Eastern Mennonite College	
Patzl, Carolyn Evelyn	Mt.	Ed.M. 1975, University of Virginia	
B.S. 1962, Washington and Lee University		Peacock, Harold	
Pattyn, Michael	Pa.	A.R. 1941, Columbia University	
Pattison, Michael Paul, Jr.	Mt.	A.M. 1964, The George Washington University	
A.B. 1968, University of Maryland		Peak, Harold Lee	
Pattison, Ian Alfred	Va.	A.B. 1941, Clark University	
Pattison, Helen Marion	Va.	Peake, Gerald Maurice	
Pattison, Jim McHughal	Va.	Pease, James Tucker	
Pattison, Jeremiah	Mt.	A.B. 1966, The George Washington University	
Pattison, Allan George	D.C.	Peet, Peter Bradford	
B.S. & B.A. 1971, Boston University		A.B. 1971, Holyoke College	
Pattison, Charlotte Delores	Va.	Peet, Gerald Max	
B.S. 1972, D.C. Teachers College		Peet, William Wright	
Pattison, Charles Clifford	D.C.	Peet, Jean Elizabeth	
Pattison, George Alexander		Peet, William Wythe	
B.S. 1971, U.S. Naval Academy		Peet, Lowell David	
A.M. & Ed.M. 1971, The George Washington University		Peet, Evelyn Josephine	
Pattison, Mary Kay	Va.	A.B. 1971, Ohio University	
Pattison, Mary Rose	Mt.	Peet, Patrick Anthony	
Pattison, Mary Seaborn	Pa.	A.B. 1977, Brown University	
Pattison, Sarah Catherine	Pa.	Peet, Margaret Holloway	
A.B. 1967, Iowa State Teachers College		Peet, Dorothy Abbott	
A.M. 1943, Columbia University		Peet, Edward Louis	
Pattison, Tessie Ann	Ohio	B.S. 1966, University of California at Los Angeles	
B.S. & B.A. 1966, Waynesburg College			

Students Registered

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Pera, Harold Bernard B.S. 1941, Bowling Green State University	N I	Pentost, Marilyn Elaine Pentost, Ronald Lewis Pentst, Lena Pentst, Peter George Pentst, Michael Lashman A.B. 1941, Upstate College A.M. 1942, State of Advanced International Studies Dissertation 1943, Universidad Carolina, Ecuador	Mt Va D.C. D.C. Va
Pera, John Arthur B.S. 1941, Northwestern University	D.C. Mich	Pepper, Florence M. B.S. 1944, Western State University	D.C.
Pera, Anna Nancy Anne Pentst, Edward Berdon Pentst, Peter College Pentst, Jane Rutan Pentst, Mary J. Hunter A.M. 1941, Mississippi Southern College Pentst, Virginia University	D.C. N J N Y D.C. Va	Pera, William Pera, Richard Edward Pera, Cecilia German Pera, Cesar Pera, Ivan Ivanovich Pera, Louis Vincent Pera, Gonzales Manuel B.C.E. 1944, College of the City of New York	D.C. Wash Mexico D.C. Cuba Mt D.C.
Pera, William Herman, Jr. Pera, Kenneth Alan Pera, Kenneth Edward A.B. 1941, Kansas State Teachers University, Emporia Pera, John University of Kansas Pera, Edward III Pera, Mary Margaret B.S. 1941, M.E. 1949, University of Kentucky	Va Va Va Pa Md	Pera, Robert R. B.S. 1941, Georgetown University Pera, Norman Nathaniel B.S. 1941, College of the City of New York	D.C. D.C. D.C. Va N Y
Pera, Sototzar Pera, George 1941, Belgrade University Pera, Victor J. Pera, Lucy Ann Pera, Stephen Pera, George Bernard, Jr. B.S. 1941, University of Maryland Pera, George Washington Pera, Norman Carl B.S. 1941, L.L.B. 1942, University of Washington Pera, Maurice Collins Pera, George Scott Pera, George Ann Pera, George Washington	Yugoslavia Pa D.C. Md Md Wis Md N.C. D.C.	Pera, Alan Moses Pera, Harold Taylor A.B. 1941, Saint College Pera, Louis Fanning A.B. 1941, San Francisco State College Pera, Bruce Hamilton A.B. 1941, American University Pera, Michael J. A.B. 1941, St. John's University Pera, Agostino Peter Pera, Louis Marie A.B. 1941, University of Maryland Pera, Charles Freeman, Jr. B.S. 1941, M.E. 1941, Agricultural and Technical College of North Carolina	D.C. D.C. Calif D.C. Conn D.C. Conn
Pera, Louis Aida Pera, Howard University Pera, M.S. 1947, Howard University Pera, Philip Lamar Pera, Roger Lee Pera, Charles A. Pera, General Institute of Pera, John Maria Pera, Thomas Pera, John C. Teachers College Pera, William Van Pera, John Van Pera, Robert University of Maryland Pera, Robert Graham Pera, John Pera, John The George Washington University Pera, John Everett, Jr.	Texas Ga D.C. Va China D.C. S.C. D.C. Md D.C. D.C. Md D.C. D.C. Md D.C. Md	Pera, David Louis Pera, Dennis Richardson Pera, Elmer Leroy A.B. 1941, Northwestern State College of Louisiana Pera, Paul George Pera, James A. A.B. 1941, Northeastern University A.M. 1941, Boston University Pera, John J. Pera, Kenneth Guy Pera, Margaret Jane Pera, Owen Everett B.A. 1941, Georgia Institute of Technology Pera, Ralph Foster, Jr. A.B. 1941, University of Vermont Pera, Ralph Graham, Jr. Pera, Samuel Leonard A.B. 1941, The George Washington University Pera, William Fred A.B. 1941, Princeton University Pera, Thomas Pera, Anne F. A.B. 1941, Morgan State College	N Y Va Md Md Md D.C. N I Va D.C. Va Va D.C. D.C. Term D.C.

Perwin, Stanley S.	N.J.	Peruh, Laura Virginia	MD
A.B. 1933, Rutgers University		B.S. 1947, Ursinus College	Va
L.B. 1935, Georgetown University		M.S. 1950, Purdue University	D.C.
Perry, Udo Sven	D.C.	Peterson, George Dallas II	Pa
B.S. in C.E. 1955, Valparaiso University		Peterson, Josephine Mary	
Pessack, Elmer William	D.C.	Peterson, Harold	
Pessack, Joseph	Israel	B.S. 1958, Pennsylvania State University	MD
Peter, Harold Eugene	D.C.	Petras, Patricia Harley	Pa
Peter, Harold Eugene	Va	A.B. 1951, Smith College	
Peters, Richard	D.C.	Peterson, Richard McFarland	MD
B.S. 1947, University of Pennsylvania		A.B. 1950, University of Pittsburgh	
Peters, Tony John	Pa	Peterson, Walter Alfred	MD
Peterson, Norman Hader	Va	B.S.E. 1950, University of Connecticut	
B.A.E. 1947, University of Minnesota		Peterson, William Anthony	W.Va
Peterson, Frank Cavalier	Va	B.S. 1948, Fordham University	
Peterson, Ann John	Va	Peterson, Alfred Karl	
A.P. B.S. 1947, Ohio State University		A.B. 1958, Washington and Jefferson College	MD
A.M. 1951, University of Chicago		Peterson, James Henry	D.C.
Peterson, Caroline Sawyer	N.Y.	Peterson, Patricia Ann	MD
Peterson, Charles Edmond	Md	Peterson, Christopher F. III	Vietnam
B.S. 1951, University of Illinois		Peterson, Fran Thuan	Va
Peterson, David Noel	Minn.	Peterson, Minnie Rob	
B.S. 1953, Bethel Young University		A.B. 1957, University of William and Mary	
Peterson, John Otto	D.C.	A.M. 1950, University of Chicago	
B.S. 1957, Virginia Union University		A.M. 1956, The George Washington University	D.C.
Peterson, Lucie Koenig	D.C.	Petras, Joanne Argyro	D.C.
B.S. 1957, Virginia Union University		Philips, Vernon Graydon	
Peterson, James C.	D.C.	A.B. 1950, University of Virginia	MD
A.B. 1958, Mississippi Industrial College		Philips, Alan Whitten	Va
Peterson, Judith Elaine	D.C.	B.S. in L.L. 1954, University of Maine	
Peterson, Kent Alvin	MD	Philips, William	D.C.
A.B. 1956, The George Washington University		A.B. 1957, Columbia College	
Peterson, Martin Robert	Minn.	Philips, William Bruce	
B.S. 1956, University of Minnesota		Philips, William Scott	Va
Peterson, Ron Herbert	Va	A.B. 1954, Wesley College	D.C.
Peterson, Robert Beatrice	N.C.	Philips, Betty Jean	
Peterson, Thomas Lee	Va	Philips, Frederick David	
B.S. 1956, Stanford University		A.B. 1956, The George Washington University	Va
Peterson, Walter Raymond	Va	Philips, Fred Emmett Jr.	Pa
B.S. in M.E. 1948, University of California		Philips, Fred Emmett Jr.	
Peters, Albert B.	Va	Philips, George L.	MD
A.B. 1954, University of Missouri		Philips, Thomas Paul	D.C.
Peterson, Suzanne Jean	D.C.	Philips, Herbert Paul	
Peter, Benjamin	Va	A.B. 1954, Bowdoin College	
A.B. 1951, D. C. Teachers College		H.B. 1957, Louisiana State University	MD
Peter, Stuart Jay	Va	H.M. 1958, New York University	
Peterson, John	Pa	Philips, Louis Kirk	
B.S. in E.E. 1957, University of Pennsylvania		Philips, Jack Harold	Va
Peterson, John Andrew	MD	A.B. 1954, University of North Carolina	
Peterson, Richard Eugene	Calif.	Philips, James Louis	Calif.
Peterson, Robert Eugene	Cuba	A.B. 1954, University of Virginia	
A.B. 1954, The George Washington University		Philips, John Louis	Va
Peterson, Albert Anthony	D.C.	A.B. 1954, University of Denver	
Peterson, Christian Quarantine	D.C.	Philips, Joe Wayne	
Peterson, Iva	Wis.	A.B. 1954, Arizona State University	
Peterson, Robert Allen	Wisc.	B.S. 1954, Arizona State University	
B.S. in M.E. 1954, University of Wisconsin		Philips, Joseph Corway	
Petrick, John	Pa	Philips, Joseph Corway	
A.P. in Geol. 1956, The George Washington University		Philips, Joseph Corway	
M.S. 1958, Columbia University		Philips, Joseph Corway	
Peterson, Donald Edward	D.C.	Philips, Joseph Corway	
A.B. 1954, College of Wooster		Philips, Joseph Corway	
Peterson, Hugh McChesland	D.C.	Philips, Joseph Corway	
Peter, Andrew Arnold	Va	Philips, Joseph Corway	
Peter, Jack Daniel	Pa	Philips, Joseph Corway	

Poegenmeyer, Herman Jr.	Kans	Poremba, Susan Diedrich	D.C.
B.S. 1942, U. S. Naval Academy		Porta, Alvino	N.Y.
Poever, Louise P.	D.C.	Law Degree 1958, Universidad Nacional de Nicaragua	
B.S. 1931, Douglass College		Portland, Isabel Barbara	Va.
A.M. 1938, Columbia University		A.B. 1938, New York University	
Prentiss, William Lloyd	Md.	Potts, David Richard	
A.B. 1938, Williams College		Potts, Joseph Hans	
Pols, Walter George	D.C.	B.S. in C.E. 1935, The George Washington University	
Pohorylo, Prince E.	D.C.	Potter, Albert Bates	
Pohr, David George		Potter, Edwin Hines	
Law Degree 1939, Masaryk University, Czechoslovakia		Potter, John Myron	
A.M. 1938, American University	Va.	Potter, Mary Ann	
Pollack, Bernard Paul	Md.	A.B. 1939, George City College	
Pollack, Stephen		Potter, Mary Jane	
A.B. in Govt. 1954, The George Washington University		A.B. 1940, Mary Washington College	
Pollard, Stanley Philip	D.C.	Potter, Paul Joseph Jr.	
Pollard, James Charles	D.C.	A.B. 1940, University of Pittsburgh	
B.S. in Eng. 1938, The George Washington University		Potter, Stephen Rochester	
Pollack, Stanley Anthony	Pa.	Potter, Thos. Remond	
Pollack, David	Fla.	A.B. 1944, The George Washington University	
B.S. in A.E. 1956, University of Miami		Potter, Walter Wesley	
Pollack, Harold Jerome	D.C.	Potterfield, Marion Eugene	
Pollack, Louis Frederick	Md.	Potterfield, Margaret Krebs	
A.B. 1937, Cornell University		Potterfield, Robert James	
Pollack, Morris Lewis	Va.	Potterfield, Carolyn	
B.S. in M.E. 1951, Newark College of Engineering		Potter, Freda Carl	
Pollack, Raymond	N.Y.	A.B. 1940, The George Washington University	
Pollack, Samuel	N.Y.	Pratt, Eugene	
Pollack, Philip Jr.	Md.	Pratt, James Quincy	
B.S. in M.E. 1951, Virginia Polytechnic Institute		Pratt, Jack	
M.S. in M.E. 1955, Purdue University		B. Machine Eng. 1951, New York State Maritime College	
Pollard, Joseph Frederick Jr.	N.H.	Pratt, John	
A.B. 1937, Amherst College		Pratt, Herbert S.	
Pollard, Robert	Va.	B.S. 1937, College of the City of New York	
Pollard, William John	D.C.	M.S. 1937, Purdue University	
Pollard, Dan	D.C.	Pratt, Jack	
Pollard, Charles Edward	Md.	B.S. 1941, Queens College	
Pollard, Marion		Pratt, John Hume	
B.S. 1937, University of Pennsylvania		Pratt, Selma Swabman	
Pollard, Victor Arnold	D.C.	A.B. 1947, The George Washington University	
Pollard, Albert Michael	Md.	Washington University	
A.P. 1941, Cornell College		Possessy, Robert Francis	
M.S. 1947, University of Iowa		B.S. in E.E. 1954, M.S. in E.E. 1956, Carnegie Institute of Technology	
Pollard, Robert Mary	Va.	Poss, Charles Kenneth	
Pollard, Ronald Louise	D.C.	B.S. 1947, Indiana College	
Pollard, Bryan Lewis	D.C.	Pott, Richard Bennett	
Pollard, Rose	D.C.	B.S. 1938, Iowa State College	
B.S. 1939, Tulsa University		Potts, John Joseph Jr.	
Pollard, Orlan	D.C.	B.S. in Eng. 1937, The George Washington University	
A.B. 1940, University of California, Berkeley		Potvin, Carl	
Pollard, Joseph	Va.	Potvin, Carl	
A.B. 1937, History College		Potvin, Leonard William	
Pollard, Sidney L.	D.C.	B.S. in E.E. 1954, University of Pittsburgh	
Pollard, Thomas	Va.	B.S. 1944, Pennsylvania State University	
A.B. 1937, University of California		Potvin, Howard William	
Pollard, Alfred Thomas	N.Y.	B.S. 1940, Bucknell University	
Pollard, Thomas Henry	D.C.	A.M. 1941, New York University	
Pollard, Scott Donald	Md.	Potvin, Robert Lee	
Pollard, William Alfred	Md.	Potvin, Robert Lee	
Pollard, Martin Timothy	Ohio	Potvin, Arthur Joseph	
Pollard, Charles George		Potvin, Susan Helen	
B.S. 1939, Mount Union College		Potvin, Robert	
Pollard, Henry Sue	D.C.	A.B. 1947, Allegheny College	
Pollard, Rose	D.C.	Potvin, Stephen William	
Popper, Robert David	Md.	A.B. 1942, Brown University	
		M.S. 1943, New York University	

Lozer, Boyd		Pressman, Maurice	Va
B.S. 1955, National University	Va	B.S. 1958, Worcester Polytechnic Institute	Va
Bertha, Lynn		Presson, Jerry Maxmiller	D.C.
B.S. 1955, Washington University	Ill	B.L.E. 1952, New York University	D.C.
Benny, Keith		Preston, Corinne Williams	Md
B.S. 1955, University of South Carolina	S.C.	Preston, Roger Williams	Conn.
Chesapeake M. Kenzie		Preston, Sperry Hutton	Conn.
Donald M. Mader	Va	Presymant, Florence Johnston	Md
B.S. 1955, Tulane University	Pa	A.B. 1954, University of Maryland	D.C.
John Thomas		Pyle, Bruce Hume	Md
B.S. 1955, Rutgers College	Va	Pyle, Rosamund Love	
John, William		R.S. 1947, A.M. 1949, Wake Forest College	N.Y.
B.S. 1955, University of Minnesota	Va	Price, Fina Louise	Va
John, William		Price, Florence Lyons	
Ward, Frederick	Md	A.B. 1955, New York University	Va
B.S. 1955, Baldwin Wallace College	Ohio	Price, John	Va
William, Alfred		Price, John Hunter	Va
B.S. 1955, Wake Forest University	D.C.	Price, Nancy Bernadette	D.C.
William, William		Price, Robert Elmer, Jr.	D.C.
William, Thomas, Jr.		Price, Sandra Paula	D.C.
B.S. 1955, U.S. Naval Academy	Va	Price, Tru Howard	D.C.
John, Carroll		A.B. 1955, Texas Agricultural and Mechanical College	
Roy, Jerome	Md	A.M. 1956, University of Texas	Md
John, Thomas	Md	Price, William H. H.	Fla
B.S. 1955, M.E. 1957, Virginia Polytechnic Institute	Va	B.S. 1955, U.S. Naval Academy	
James, Eugene Edmunds		Price, William H. H.	
B.S. 1955, Maryland University	Wis	A.B. 1954, A.M. 1954, University of Florida	
James, Richard		Price, William, Jr.	Va
B.S. 1955, University of Illinois	Ill	B.S. 1957, Marshall College	D.C.
Robert, Karlberg		Price, Zelma Kennedy	Va
B.S. 1955, Cedarville College	Va	A.B. 1955, Bethaven College	
James, Arthur	Mass	Pickard, Donald Lee	
B.S. 1955, Tufts College		A.B. 1955, The George Washington University	D.C.
James, Marvin		Priddy, Robert Ralph	D.C.
Lawrence, Willis	N.Y.	B.S. 1955, Indiana College	D.C.
John, Lee	D.C.	Pyburn, Stella Lane	D.C.
James, James Henri	Ill	Pyburn, Henry Thos	Australia
B.S. 1955, Iowa State College	Va	B.S. 1955, University of Tasmania	
John, Stanley		A.B. 1957, University of Melbourne	
B.S. 1955, The George Washington University	Va	Pyburn, Marianne	D.C.
William, Nathaniel		Pyburn, Walter Scott	Va
B.S. 1955, R.S. 1957, California University	India	B.S. 1955, Northwestern University	N.C.
William, Thomas		Pyburn, Emily Nell	
William, Thomas		A.B. 1955, Davidson College	Pa
B.S. 1955, University of Virginia	N.Y.	Pyburn, Albert Richard	Pa
William, Thomas	Okla	Pyburn, George Howard, Jr.	D.C.
B.S. 1955, University of Virginia		B.S. 1955, Temple University	
William, Thomas		Pyburn, Marvin Cason	
B.S. 1955, A.M. 1955, Vanderbilt University		A.B. 1955, Randolph-Macon Woman's College	
William, Thomas		Pyburn, Mary Walter	D.C.
B.S. 1955, Texas	Calif	Pyburn, Sherita Mae	N.Y.
William, Elizabeth		Pyburn, Donald W. S.	Va
B.S. 1955, University of Virginia	Va	Pyburn, Glenn	D.C.
William, Thomas		Pyburn, William Howard	N.I.
B.S. 1955, Dartmouth College	Md	Pyburn, Robert Linton	Va
William, Thomas		Pyburn, William Linton	D.C.
B.S. 1955, Emory University	Va	B.S. 1955, Moreau State College	
William, Thomas		Pyburn, Gaila Lee	Kans
B.S. 1955, University of Virginia	Md	B.S. 1955, Kansas State Teachers College, Topeka	
William, Thomas		Pyburn, William Linton	Va
B.S. 1955, University of Virginia	Va	Pyburn, John Mervin	D.C.
William, Thomas		Pyburn, Anthony	N.I.
B.S. 1955, University of Virginia	Md	Pyburn, Thomas Adams	Pa
William, Thomas		A.B. 1955, Haverford College	
B.S. 1955, University of Virginia	Md	A.B. 1955, Oxford University, England	
William, Thomas		M.D. 1955, University of Pennsylvania	
B.S. 1955, University of Virginia	D.C.		
William, Thomas			
B.S. 1955, University of Virginia	Md		
William, Thomas			
B.S. 1955, University of Virginia	Fla		

Proctor, Sarah Nelson	Va.	Pyatt, Nancy	D.C.
Profeta, Philip Peter	Md.	B.S. 1930, St. Mary's College, Kent	D.C.
A.B. 1929, University of Miami		Pyle, John R. Lee	Va.
B.S. 1936, D.C. Teachers College		Pyon, Charles Bucklin	
Prokop, John Andrew	Pa.	B.S. & B.A. 1947, A.M. 1955,	Md.
Prokopovich, Imelda Doria	Md.	University of Arkansas	
Prommarat, Nonglak	Thailand	Pyles, LeRon Andrew	
A.B. 1953, Chulalongkorn University,		B.S. in Comm. 1951, University of	
Thailand		Virginia	
Proton, Alexander	Calif.		
A.B. 1938, University of California		Q	
Propp, Walter Nelson	Md.	Quackenbush, Leon Douglas	Md.
Prosser, Martha Raye	Md.	A.B. 1937, Oklahoma State College	N.M.
Pross, Vincent Joseph, Jr.	N.J.	Qualls, Carter Parker	
B.S. 1939, St. Johns College		B.S. 1948, Michigan State University	
Prosser, Barbara Jean	D.C.	of Agriculture and Applied Science	
Prosser, Beverly Rita	D.C.	Ed M. 1949, University of California	
Prosser, Carl Wesley	Calif.	Qualls, Elizabeth Frances	Conn.
Prosser, Nancy Lee	Conn.	A.B. 1918, Xavier University	N.C.
A.B. 1937, Tenbroeke College		Qualman, Harry Bryce	Md.
Prosser, Lynn Ann	Ill.	Quinn, Arthur Lewis	
Prosser, Helen Beal	Md.	Quinn, Paul Joseph	
Prosser, Kenneth James	Md.	B.S. 1932, University of Scranton	
B.S. 1931, U. S. Naval Academy		Quinn, Anthony Thomas	
Prosser, Betty Jean	Va.	A.B. 1937, The George Washington	
Prosser, Stanley	Md.	University	
B.S. 1936, The George Washington		Quinn, Ronald Peter	
University		Quinn, Anne Donald	
Prosser, Elaine Bruce	D.C.	Quinn, Lily Kathryn	
B.S. 1934, D.C. Teachers College		Quinn, Christina Abad	
Pryor, James Lawrence	Va.	B.S. in Ed. 1948, The George	
Pryor, Linda Suzanne	Va.	Washington University	
Pryor, George, Jr.	Va.	Quinn, Lillian Fox	
B.S. in M.E. 1934, University of		Quinn, Lillian Joseph	
Rhode Island		A.B. 1937, West Virginia University	
Pryor, Barbara Jeanne	Pa.	H.B. 1937, The George Washington	
Pryor, Kathleen Mary	Pa.	University	
Pryor, Jack Harvey	Va.	Quinn, Frederick Sherman	
Pryor, Eugene Eugene Reid	Va.	A.B. 1938, University of Rochester	
A.B. 1935, Bowdoin College		M.A. 1938, Columbia University	
Pryor, Gary Kay	Va.	Quinn, Harold Eugene	
Pryor, John John Dunman	Va.	B.S. in Ed. 1938, Fairleigh State	
Pryor, Lawrence	Md.	College	
Pryor, Vincent Augustus		Quinn, Raymond Benjamin	
A.E. 1934, Bucknell University		Quinn, Patricia Ann	
Pryor, Donald Anthony	N.J.	Quinn, Robert	
Pryor, Edwin Rock	Va.	Quinn, Arthur James	
B.S. 1937, North Carolina College at		Quinn, Frederick James	
Charlotte		B.S. in Ed. 1937, University of Iowa	
Pryor, Donald Wayne	Va.	Quinn, Raymond Henry	
A.B. 1938, College of William and		B.S. 1937, Newark College of	
Mary		Engineering	
Pryor, Theodore Robert	Calif.	Quinn, Lillian Elizabeth	
A.B. 1936, B.S. 1937, University of			
California		R	
Pryor, John Stark	W.Va.	R	
B.S. 1937, Marshall University of		Rabinowitz, Elsie	
Georgia		B.S. 1937, University of London	
Pryor, Lillian Tine	D.C.	Rabinowitz, Jerry	
Pryor, Virginia Caldwell	D.C.	A.B. 1938, West Virginia Wesleyan	
A.B. 1937, University of South Carolina		Rabinowitz, Sharon Lea	
Pryor, John Farney	Va.	Rabinowitz, Aaron	
Pryor, Samuel David	D.C.	B.S. 1937, University of Illinois	
Pryor, Ann Lillian	Va.	Rabinowitz, Thomas	
A.B. 1937, Furman University		A.B. 1937, American University	
Pryor, John Washington		Rabinowitz, Mary Louise	
A.B. 1937, The George Washington		Rabinowitz, Mark Lester	
University			
Pryor, William Samuel, Jr.	Miss.		
A.B. 1934, Harvard University			
Pryor, James Eugene	D.C.		

Students Registered

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[illegible]

[illegible]

Rice, Cecil Barth	D.C.	Richmond, Milton Baldwin	Tenn.
Rice, Emma Lay	D.C.	B.S. 1940, Northwestern Louisiana	Tenn.
Rice, Jerry A. Jr.	N.C.	Institute	W.
B.S. 1947, Western Carolina College		Richter, Lueda	
M.S. 1951, University of Tennessee		Richter, Maxine Joyce	
Rice, Joseph Patrick	Va.	Ridgeway, Thomas Kent	
B.S. & C.E. 1949, University of		B.S. 1941, Pennsylvania State	
Kentucky		University	Tenn.
Rice, Morris H.	Va.	L.L.B. 1945, L.M. 1953, The George	
A.B. 1946, Wabash College		Washington University	
Rice, Thomas Hunter	Pa.	Richter, Jack Wane	
Rice, Vincent Russell	Va.	B.S. 1951, Tennessee Polytechnic	
Rice, John W.	Va.	Institute	
Rice, Joseph William	Va.	Ricks, David Kay	
Rice, Robin Alexander	D.C.	Riney, Charles Peristally	
Richard, James L.	Ohio	Ritchell, Robert Roma	
B.S. 1951, Bowling Green State		A.B. 1957, University of Southern	
University		California	
Richards, Donna Mae	Va.	Ritten, Ray M. Mary	
A.B. 1947, Marshall College		Ritter, Harold Graham	
Richards, Gerald Francis, Jr.	N.Y.	Ritter, James	
B.B.A. 1946, Niagara University		A.B. 1947, The George Washington	
Richards, Jack Louis	M.I.	University	
Richards, James Cooper	Va.	Ridgeway, Joan Roberta	
Richards, Jane	D.C.	Ritter, Alan Joseph	
Richards, Lois Compton	Va.	Ritter, Ann Marie	
Richards, Suzanne Virginia	D.C.	Ritter, Neale Ruth	
A.B. 1947, J.D. 1952, The George		B.S. 1942, Virginia Polytechnic	
Washington University		Institute	
Richards, William Ramsey	D.C.	Ritter, Philip Alan	
A.B. 1948, The George Washington		Ritter, Robert James III	
University		Ritter, Robert Stephen	
Richardson, Deborah Mary	Va.	Ritter, Robert Lee	
Richardson, Isaac Conway	Va.	B.S. 1957, M.S. 1958, Howard	
Richardson, Paul, Jr.	Va.	University	
B.S. & C.E. 1949, West Virginia		Ridolfi, Richard Robert	
University		B.S. 1959, University of Miami	
M.S. 1961, State University of Iowa		Rider, Peggy Lynn	
Richardson, Gordon Albert	D.C.	Rife, Beatrice Conner	
B.S. 1938, The George Washington		L.L.B. 1950, Houston Law School	
University		Ritter, Hans Gottlieb	
Ridgely, Henry Albert	D.C.	B.B.A. 1947, Western College	
Ridgely, Helen of Noid	Ca.	Ritter, Norma Nellie	
A.B. 1938, The George Washington		Ritter, William Joseph	
University		A.B. 1946, Adelphi College	
Ridgely, James Edwin, Jr.	Va.	Ritter, James Joseph	
Ridgely, Melvin Lee	Va.	Ritter, Bernard David	
Ridgely, Nancy Elizabeth	Va.	B.S. 1941, Temple University	
B.S. 1947, Lincoln College		Ritter, William Henry	
Ridgely, Thomas L.	Ohio	B.S. 1946, Clemson Agricultural	
Ride, Richard Wallace	Ohio	College	
A.B. 1947, University of Colorado	Conn.	Ritter, Charles Emory	
Ridgely, Charles G.	M.I.	B.B.A. 1950, University of Denver	
Ridgely, William John	Va.	M.S. 1954, Lincoln Institute of	
B.S. & B.A. 1950, Northwestern		Technology	
University		Riley, Ann Frances	
Ridley, Leonard	D.C.	Riley, Catherine Taylor	
Ridley, Oliver Leroy	D.C.	Riley, Dennis Joseph	
Ridley, Drake	W.Va.	Riley, John Eugene	
A.B. 1946, West Virginia University		Riley, John Eugene	
Ridley, Patricia Ann	M.I.	A.B. 1949, West Virginia University	
Ridley, David Arthur	Va.	A.M. 1952, Ibid.	
A.B. 1948, Homestead College		Riley, Philip James	
Ridley, Ronald Ann	D.C.	Ridley, William Clinton	
Ridley, Anne Chert	D.C.	Riley, Carl E. M.	
Ridley, Ann Lee	D.C.	B.S. 1950, Midway College	
Ridley, Allen	D.C.	Ridley, Eugene	
B.S. 1949, Massachusetts Institute		Riley, Francis	
of Technology	D.C.	Riley, Joseph	
Ridley, Ernest Sue	Mass.	Riley, Thomas Joseph	
Richmond, Luther Henry, Jr.		A.B. 1940, University of Michigan	

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Students Registered		675
Robert, Chairman	D.C.	Robertson, James Colvert
Robert, University of Washington	D.C.	B.S. 1947, University of Maryland
Robert, Anna	D.C.	Robertson, Joseph Peter
Robert, Anna Frances	Va.	Robertson, Joseph Lynn
Robert, George	Va.	A.B. 1941, Shepherd State College
Robert, University of Arizona	Va.	Robertson, Roger Lynn
Robert, Charles Robert	Va.	A.B. 1945, University of Cincinnati
Robert, Virginia Military Institute	Va.	A.M. 1947, Columbia University
Robert, David Donald	Va.	Robertson, Sandra Louise
Robert, The George Washington	Va.	Robertson, Thomas Lee, Jr.
Robert, Charles Robert	Texas	Robertson, William III
Robert, Robert Howard	Md.	B.S. in E.E. 1949, Purdue University
Robert, Mary Helen	Pa.	Robertson, Martin Howard
Robert, The George Washington	Pa.	B.S. 1942, Virginia Polytechnic Institute
Robert, Elmer Roland	Va.	Robert, Irene
Robert, Houghston College	Va.	A.B. 1936, A.M. 1942, New Jersey State Teachers College
Robert, University of Chicago	Pa.	Robertson, Richard Henry
Robert, Robert William	Pa.	B.S. in B.A. 1938, Morris Harvey College
Robert, B.S. 1946, Pennsylvania State University	Pa.	Robert, Anne Carter
Robert, Carnegie Institute of Technology	Pa.	Robertson, Bert Paul
Robert, Govt. 1936, The George Washington University	Puerto Rico	B.S. 1931, Thomas and Eliza College
Robert, Elmer Herndon	Md.	Robertson, Charles Augustus, Jr.
Robert, U.S. Naval Academy	Va.	D.E.E. 1939, University of Virginia
Robert, Robert Hadden	Va.	Robertson, Timothy B.
Robert, Wayne Rome, Jr.	D.C.	Robertson, Frank Lane
Robert, Wesleyan	Va.	Robertson, Florence Neelie
Robert, Mary Thomas	Va.	Robertson, Fred A. William
Robert, The George Washington	Va.	A.B. 1934, Emory University
Robert, Ruth	Md.	Robertson, Geneva Stanley
Robert, The George Washington	D.C.	A.B. 1934, The George Washington University
Robert, David E. Irwin	D.C.	Robertson, George Samuel
Robert, The George Washington	D.C.	Robertson, George May
Robert, The George Washington	D.C.	B.S. 1934, M.S. 1936, Florida Agricultural and Mechanical University
Robert, The George Washington	D.C.	Robertson, Eugene Corvus
Robert, The George Washington	S.C.	B.S. 1933, D.C. Teachers College
Robert, The George Washington	Wash.	A.M. 1937, Howard University
Robert, The George Washington	Md.	Robertson, Linda Jerome
Robert, The George Washington	Va.	Robertson, Margaret Elizabeth
Robert, The George Washington	Va.	B.S. 1937, D.C. Teachers College
Robert, The George Washington	Va.	Robertson, Martha Irene
Robert, The George Washington	Va.	A.B. 1944, University of Massachusetts
Robert, The George Washington	Va.	Robertson, Nancy Faye
Robert, The George Washington	Va.	Robertson, Patricia Louise
Robert, The George Washington	Va.	Robertson, Richard Clarence
Robert, The George Washington	Va.	Robertson, Robert Paul
Robert, The George Washington	Va.	Robertson, Robert Henry
Robert, The George Washington	Va.	B.S. in O.E. 1939, Cornell University
Robert, The George Washington	Va.	Robertson, Samuel Edgar Zimery
Robert, The George Washington	Va.	B.S. in M.A. Arts 1939, West Virginia State College
Robert, The George Washington	Va.	Robertson, William Michael
Robert, The George Washington	Va.	B.S. in A.E. 1938, New York University
Robert, The George Washington	Va.	Robertson, U.S. Naval Academy
Robert, The George Washington	Va.	Robertson, Eugene Joseph
Robert, The George Washington	Va.	B.C.E. 1939, Central University of America
Robert, The George Washington	Va.	Robertson, John Douglas
Robert, The George Washington	Va.	B.S. 1931, Eastern Young University
Robert, The George Washington	Va.	Robertson, Albert Benjamin, Jr.
Robert, The George Washington	Va.	Robertson, Leonard Earl
Robert, The George Washington	Va.	Robertson, Helen Louise
Robert, The George Washington	Va.	Robertson, Joseph
Robert, The George Washington	Va.	Ross, Edward Allen
Robert, The George Washington	Va.	A.B. 1937, Northwestern University

Rockelli, Gerald Herbert	D.C.	Rois, William Edward	Va.
Rockwell, Catherine L.	Va.	A.B. 1932, Florida State University	Va.
Rockwell, George Edgar	Md.	Ross, Ruth Moore	D.C.
Rodney, Patricia Ann	D.C.	Rosky, Ronald Eugene	D.C.
Rodwell, Alvin	D.C.	A.B. 1927, Greenville State College	D.C.
Rodwell, Jack J.	N.M.	Roth, Clarence Lester	Va.
Rodwell, Margaret Louise	D.C.	B.S. 1928, University of Cincinnati	Va.
A.B. 1927, Virginia Union University		Roth, William Emanuel, Jr.	Md.
Rodick, Meola	D.C.	Roth, Arvid Larry	Va.
Architect 1926, Vienna Institute		Roscoe, John Francis	Va.
of Technology		B.S. 1926, University of Akron	Va.
Roderick, Mary Ellen	Md.	Roscoe, Raymond Charles	Va.
B.S. in Ed. 1927, Massachusetts State		A.B. 1926, West Liberty State College	Va.
Teachers College, Salem		Ross, Sandra Jean	Tenn.
Rodetsky, Morton	N.J.	Rosson, Lowell Charles	D.C.
Rodgers, Edward Clarence	Va.	Rosson, Mark	D.C.
B.S. in E.E. 1927, Duke University		A.B. 1928, Duke University	D.C.
Rodgers, John Edward	Va.	Rosser, Reed Thomas, Jr.	Tenn.
LL.B. 1922, Vanderbilt University		B.S. 1926, Lehigh University	Tenn.
Rodgers, John Freeman	Ky.	Rosser, John Cummings	Va.
A.B. 1926, University of Louisville		Rosser, Philip Joseph	Va.
Rodgers, John Henry	Va.	B.S. 1926, Drexel Institute	Va.
B.S. 1924, U. S. Naval Academy		of Technology	Va.
B.D. 1925, Virginia Theological		Rossmore, James Joseph, Jr.	Va.
Seminary		M.E. 1926, Stevens Institute of	Va.
Rodier, Stella Ellen	Va.	Technology	Va.
Rodman, David Gilbert	D.C.	Rossmore, Salomo William	D.C.
B.S. 1926, Temple University		B.S. 1926, University of	D.C.
A.M. 1927, American University		Vermont	D.C.
Rodman, William Kenneth	Va.	Ross, Suzanne	D.C.
Rodman, William, Sara	Va.	Ross, Anne M. Herley	D.C.
Rodman, William, Amparo	D.C.	Ross, Margaret Lee	D.C.
Rodman, Frank Fred	N.Y.	B.S. 1922, Missouri State Teachers	D.C.
Rodman, John Herbert	D.C.	College, Farmington	D.C.
Rodman, John Paul	D.C.	Rosser, Ronald Earl	D.C.
Roe, Nancy Jane	Minn.	Rosser, Stuart George	D.C.
Roe, Arlene Dorothy	W.Va.	Rosser, Jean Marie	D.C.
Rodling, Barbara Lee	Va.	Rosser, William Anthony, Jr.	D.C.
Rodman, George Lee	Va.	Rosser, Mary Helen	D.C.
Rodman, Louise Joseph	Minn.	Rosser, Edgar Morgan	D.C.
Rodman, William Henry	D.C.	Rosser, Donald W. Ward	D.C.
B.S. 1926, Iowa State College of		A.B. 1926, Kenyon College	D.C.
Agriculture and Mechanic Arts		Rosser, Daniel	D.C.
Pedagogy, Iowa		Rosser, Frank Adams	D.C.
Rodman, Edward Joseph, Jr.	Md.	B.S. 1926, University of California	D.C.
Rodman, Carl	Minn.	Rosser, James	D.C.
Rodman, John Toney	Mo.	Rosser, James	D.C.
B.S. 1926, M.E. 1926, University of		Rosser, George	D.C.
California		A.B. 1927, Stephens State College	D.C.
Rodman, Kenneth Norman	N.Y.	Rosser, Maxie Marshall	D.C.
B.S. 1926, Iowa State University		A.B. 1927, Miami University	D.C.
LL.B. 1926, The George Washington		Rosser, Arthur Dewey, Jr.	D.C.
University		Rosser, Anthony Lawrence	D.C.
Rodman, Marion Olsen	D.C.	B.S. 1922, U. S. Naval Academy	D.C.
B.S. 1926, University of Minnesota		M.S. 1922, Columbia University	D.C.
Rodman, Michael	D.C.	Rosman, Joseph Anthony	D.C.
Rodman, Thomas Charles, Jr.	Md.	Ross, Alexander Grant	D.C.
A.B. 1926, Johns Hopkins University		A.B. 1924, A.M. 1926, Wayne	D.C.
M.S. 1926, The George Washington		University	D.C.
University		Ross, Ernest Joseph	D.C.
Rodman, Robert Armstrong	Md.	B.S. 1928, St. Francis College	D.C.
Rodman, Robert Lewis	Md.	Ross, Estelle	D.C.
Rodman, Thomas Norman Reed	D.C.	B.S. 1920, University of North	D.C.
Rodman, Harold Fred	Pa.	Carolina	D.C.
A.B. 1926, University of Pittsburgh		Ross, Leslie Ira	D.C.
Rodman, William August	Va.	Ross, Mary Grace T.	D.C.
Rodman, David Conway	D.C.	Ross, Maurine	D.C.
B.S. 1926, The George Washington		Ross, Melvin M.	D.C.
University		B.S. 1928, St. Francis College	D.C.
Rodman, John Joseph	Va.	Ed M. 1926, University of Virginia	D.C.
Rodman, Henry Margaret	D.C.	Ross, Pace Benjamin	D.C.
Rodman, Gerald W.	D.C.	Ross, Shep Kalman	D.C.
Rodman, John Howard	Fla.	B.S. in Ph.D. 1925, University of	D.C.
		Georgia	D.C.

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Rosby, Ben Frank	N M	Rossman, Lynn M	MA
A.B. 1936, New Mexico Highlands University		B.S. 1948, Pennsylvania State Teacher College, Meadville	
Royer, Rachel Clark	ML	Rossman, Herman Paul	MA
A.B. 1948, Catholic College		A.B. 1948, University of Cincinnati	
Rozar, Stephen Warren	NY	at Los Angeles	
A.B. 1947, Bethany College		Rosner, Rubin Verman	MA
Rosen, Morris	N.C.	Rosner, Rubin Lee	MA
E.B.A. 1946, Wake Forest College		Rosner, Rubin Lee	MA
Rozman, Robert Sanford	MJ	A.B. 1947, University of Iowa	
B.S. 1948, M.S. 1948, The George Washington University		Roske, George William Jr	MA
Rubenstein, David Simon	MJ	Roske, Helen Frances	MA
Rubenstein, Lee George	MJ	B.S. in Ed. 1944, Ohio State University	
B.S. in C.E. 1947, University of Maryland		Rosman, Raymond Elson	MA
Rubin, Alan M.	NY	B.S. in E.E. 1948, M.S. 1949, 1944, P. D. 1947, Pacific University	
B.S. 1948, Brooklyn College		Rosman, Raymond Layman	MA
Rubin, Louise Bruce	MJ	B.S. 1943, College of Wooster	
B.S. 1944, University of Maryland		A.M. in Ed. 1944, The George Washington University	
Rubin, Mary Louise	Va.	Rosner, Leonard P.	MA
B.S. in Ed. 1945, College of the City of New York		Rosner, Thomas Olin Jr	MA
Rubin, Mary L.	MJ	A.B. in Geology, The George Washington University	
Rubin, Richard Arthur	NY	Rosner, Victor Albert	MA
A.B. 1948, The George Washington University		Rosner, Eugene	MA
Rudler, Stanley Ivon	NY	Rosner, Robert Louis	MA
B.S. 1948, The George Washington University		B.S. 1947, U.S. Military Academy	
Riley, George B.	D.C.	Rusin, Edward Bruce	MA
Rickard, Robert Thomas	MJ	Rusin, Robert John	MA
B.S. in Phys. 1948, The George Washington University		B.S. 1948, St. Joseph's College	
Rickert, Neil	W Va.	Rusin, Robert Heinrich	MA
Ricker, Thomas Ralph	Va.	A.B. 1946, The George Washington University	
Rick, George William	D.C.	Russer, Louis Matthew	MA
A.B. 1948, College of Wooster		Russer, Alexander Herman	MA
Rick, Gerald Ray	Va.	Russer, Robert Bruce	MA
A.B. in Chem. 1948, The George Washington University		Russer, Robert Amanda	MA
Rick, Helen Allen Jr	Va.	Russer, Robert Eugene	MA
Richter, Douglas	Va.	Russer, Carl Joseph	MA
A.B. 1947, Phillips University		B.S. 1942, U.S. Coast Guard Academy	
Richter, James	Conn.	Russer, Gerald Lee	MA
A.M. 1949, University of Wisconsin		Russer, James William	MA
Richter, John	Pa.	Russer, James Charles	MA
B.S. in E.E. 1948, Duke University		A.B. 1948, University of Maryland	
Richter, Paul Lewis	Maine	Russer, James Charles	MA
A.B. 1947, Yale University		Russer, John Alexander	MA
Richter, Joseph Eugene	Ohio	Russer, Lawrence III	MA
Richter, Stephen Martin	D.C.	B.S. 1942, U.S. Military Academy	
Richter, Edward William Jr	Ma.	Russer, Robert Charles	MA
Rife, James Robert	MJ	Russer, Robert	MA
Rife, Thomas Fitzgerald	MJ	Russer, Sam Lee	MA
Riffe, John Robert	D.C.	Russer, Stephen Bear	MA
Riffe, John Robert		Russer, Stephen Bear	MA
A.E. 1946, New York University		Russer, Thomas John	MA
A.M. 1948, Columbia University		Russer, Thomas John	MA
Rifkin, John George	Ma.	B.S. 1941, M.S. 1945, University of Texas	
Rife, Alan James	MJ	Russer, Warren Allen	MA
B.S. in E.E. 1944, University of Maryland		Russer, Warren Dan	MA
Rifkin, William Jonathan	MJ	A.B. 1948, The George Washington University	
Rife, Joseph	MJ	Russer, Margaret Emma	MA
Rifkin, Joseph Paul Jr	MJ	Russer, Andrew John	MA
A.B. 1944, A.M. 1947, University of Pennsylvania		B.S. 1948, Pennsylvania State University	
Rifkin, John George	Va.	M.B.A. 1948, The George Washington University	
A.B. 1944, A.M. 1947, University of California at Los Angeles		Russer, Maria Joseph	MA
Rifkin, James Gerald	D.C.	A.B. 1944, Louisiana Valley College	
B.S. 1948, Pennsylvania State Teachers College, Hazleton		A.M. 1948, Columbia University	

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Students Registered

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[illegible]

Schoeter, Gilbert Roland	Calif.	Schormann, Alfred William	
A.B. 1927, Stanford University		B.S. 1927, Lewis and Clark College	
Schoen, Stephen Earl	N.Y.	Schramm, Mary Garrett	
B.M.F. 1918, College of the City		Schramm, Marion Ann	
of New York		A.B. 1944, Teachers College	
Schoenberg, Ann Hoffman	Va.	M.D. 1944, The George Washington	
Schoenberg, Stanley	Pa.	University	
Schoenfeld, Arthur Reid	D.C.	Schreyer, William Joseph	
Schoenfeld, Carolyn Beatrice	D.C.	A.B. 1926, Trinity College	
B.S. 1947, D.C. Teachers College		Schwarz, Charles Milton	
Schoen, William Theodore	Md.	Schwartz, Martin Paul	
Schoen, Percy Anthony	Va.	B.S. 1926, College of the City of	
Schoen, Sylvia Virginia	Ark.	New York	
Schoenemann, John K.	D.C.	Schwartz, Ernest	
B.E.E. 1930, Virginia University	Va.	Schwartz, Louis Grace Ames	
Schoenemann, Elizabeth Rose	N.J.	Schwartz, Anthony John	
Schoen, Joseph Jr.		Schwartz, Arthur	
B.S. in E.E. 1928, Worcester		B.S. in E.E. 1928, Iowa State College	
Technical Institute		of Agriculture and Mechanical Arts	
Schoenbaum, William Peter	Mass.	Schwartz, Charles H.	
Schoen, Louis Kent	D.C.	B.S. in E.E. 1927, Drexel Institute	
A.B. 1926, Stanford University		of Technology	
Schoenbaum, Louis Herbert	Va.	Schwartz, Leonard Earl	
Schoenbaum, Aris Louis	Va.	Schwartz, Edna Sara	
B.S. 1926, Johns Hopkins University		Schwartz, Howard Shelton	
Schoenbaum, Irving William	D.C.	Schwartz, Monroe	
Schoenberger, Kenneth Edmund	Va.	Schwartz, Murray Allen	
B.S. in M.E. 1928, Brooklyn		B.S. 1928, College of the City of	
College of Technology		New York	
Schoenberger, Marshall Gilbert	Md.	Schwartz, David Workman	
Schoen, Murray Richard	Md.	Schwartz, Philip	
B.S. 1926, Northern Illinois State		A.B. in Geol. 1927, The George	
Teachers College		Washington University	
Schoenberger, Herbert Frederick	Va.	Schwartz, Thomas Cecil	
Schoenberger, Walter Willis	D.C.	Schwartz, Robert Elmer	
Schoenberger, George Frederick	Va.	Schwartz, Robert Elmer	
A.B. 1926, George Washington		Schwartz, Robert Elmer	
Schoenberger, John Philip	Md.	Schwartz, Robert Elmer	
Schoenberger, Karl Frederick	Md.	Schwartz, Robert Elmer	
Schoenberger, Herbert Frederick III	Al.	Schwartz, Robert Elmer	
Schoen, Dean	Va.	Schwartz, Robert Elmer	
B.E.E. 1926, Rensselaer Polytechnic		Schwartz, Robert Elmer	
Institute		Schwartz, Robert Elmer	
Schoen, Selma Victoria	D.C.	Schwartz, Robert Elmer	
Schoen, Lee E.	D.C.	Schwartz, Robert Elmer	
Schoenberger, James William	N.J.	Schwartz, Robert Elmer	
B.S. in C.E. 1926, Brooklyn		Schwartz, Robert Elmer	
College		Schwartz, Robert Elmer	
Schoenberger, Joseph	Md.	Schwartz, Robert Elmer	
Schoenberger, Charles	Va.	Schwartz, Robert Elmer	
Schoen, Robert Stuart	N.Y.	Schwartz, Robert Elmer	
A.B. 1926, Prince University		Schwartz, Robert Elmer	
Schoenberger, David Goodman	Md.	Schwartz, Robert Elmer	
Schoenberger, Charles William	D.C.	Schwartz, Robert Elmer	
A.B. 1926, University of North		Schwartz, Robert Elmer	
Carolina		Schwartz, Robert Elmer	
Schoen, Aris Allen	D.C.	Schwartz, Robert Elmer	
Schoen, Barbara Jean	D.C.	Schwartz, Robert Elmer	
Schoen, Carl Frederick	D.C.	Schwartz, Robert Elmer	
Schoen, Donald Ross	Md.	Schwartz, Robert Elmer	
Schoen, Herman Platter	Md.	Schwartz, Robert Elmer	
A.B. 1926, University of North		Schwartz, Robert Elmer	
Carolina		Schwartz, Robert Elmer	
Schoen, James Clement	Neb.	Schwartz, Robert Elmer	
B.S. 1926, University of Nebraska		Schwartz, Robert Elmer	
Schoen, John Joseph	Va.	Schwartz, Robert Elmer	
A.B. 1926, The George Washington		Schwartz, Robert Elmer	
University		Schwartz, Robert Elmer	
Schoenberger, Carl Lewis	D.C.	Schwartz, Robert Elmer	
Schoenberger, Howard Lewis	D.C.	Schwartz, Robert Elmer	
A.B. 1926, Drexel College		Schwartz, Robert Elmer	
Schoenberger, James Russell	Md.	Schwartz, Robert Elmer	
Schoenberger, Dora Sara	Md.	Schwartz, Robert Elmer	

Students Registered

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Shelton, Sarah Helen		Shields, John Quentin	Va.
Shelton, Margaret Anne	Va.	S.H. 1924, University of Pittsburgh	
Shelton, Frances Christine	D.C.	Shields, Mary Debra	D.C.
Shelton, Frances Oliver		Shields, Robert Kenneth	D.C.
Shelton, Washington College	Va.	Shields, Thomas Eugene	Ohio
Shelton, Catherine Mary		B.S. in B.A. 1924, Ohio State	
Shelton, American University	D.C.	University	
Shelton, Elizabeth Harper		Shields, Harry David	D.C.
Shelton, Gerald Paul	Ala.	B.S. 1925, The George Washington	
Shelton, Francis William	Pa.	University	
Shelton, College of the City of	D.C.	Shim, David	Korea
New York		A.B. 1925, Elizabeth Town College	
Shelton, M.E. 1924, University of		Shim, John Manning	D.C.
Virginia		A.B. 1924, The George Washington	
Shelton, Charles Paul	Va.	University	
Shelton, East Texas State College		Shim, Maxine	Md
Shelton, George E.	Md	Shim, Margaret Louise	W.Va.
Shelton, Maryland State Teachers		A.B. 1924, Shepherd State College	
Shelton, Rose		A.M. in E.D. 1925, The George	
Shelton, Robert Johnson		Washington University	
Shelton, Thomas Anthony	D.C.	Shim, Mya Saw	Burma
Shelton, Clarkson College of	Va.	A.B. 1924, B.L. 1925, University of	
Kentucky		Rangoon, Burma	
Shelton, Anna		Shim, John Robert	D.C.
Shelton, Emma Ruth	Va.	Shim, Stella Elizabeth	Va.
Shelton, University of Santa Clara	Md	Shim, Martha Elizabeth	Va.
Shelton, Fred Leslie		B.S. 1925, Northwest College	
Shelton, Virginia Boytechon Institute	Ala.	Shim, James Parker	D.C.
Shelton, Harold Thomas		Shim, Thomas William	D.C.
Shelton, From Wolfman University	Va.	B.M.E. 1925, The George Washington	
Shelton, William James		University	
Shelton, John	N.J.	Shim, Thomas Richard Jr.	Va.
Shelton, University of Iowa	Iowa	Shim, Gilbert Lee Roe	Pa.
Shelton, Fred W.		Shim, Anna Rosemary	D.C.
Shelton, University of Tennessee	Tenn.	Shim, Francis Michael	D.C.
Shelton, Harry Ann		Shim, William George	Md
Shelton, David Lawrence	W.Va.	Shim, John Russell Sr.	Va.
Shelton, A.M. 1925, Roosevelt	Ill.	A.B. 1924, Virginia Union University	
Shelton, University		Shim, John	D.C.
Shelton, Larry Ray		A.B. 1924, Virginia State College	
Shelton, Lafayette College	Pa.	E.D. 1925, Ohio State	
Shelton, Leo Stanley		Shim, Francis Sumner	Va.
Shelton, Ann	Va.	Shim, Lee Louise Ann	Va.
Shelton, American University	D.C.	Shim, Anne Hilary	D.C.
Shelton, Howard University		Shim, Robert Lawrence	D.C.
Shelton, Susan Gossin	D.C.	B.S. 1925, Pennsylvania State	
Shelton, A.B. 1928, American	Md	University	
Shelton, University	D.C.	Shim, Louis Edwin Jr.	Md
Shelton, Mary Marion		B.S. 1925, Georgetown University	
Shelton, University of Maryland	D.C.	Shim, Donald Cary	D.C.
Shelton, Thomas George		Shim, Mary Ruth	Md
Shelton, Yale University	Va.	Shim, Donald Victor	Md
Shelton, William George		Shim, James Francis	Md
Shelton, John	R.I.	Shim, John Eugene	W.Va.
Shelton, M.S. 1925, The George	D.C.	A.B. 1925, Western Washington	
Shelton, University		College of Education	
Shelton, Virginia		Shim, Susan Patricia	Md
Shelton, John	D.C.	A.B. 1925, University College	
Shelton, Jeanne		Shim, Anne	D.C.
Shelton, Western Kentucky State	Md	B.S. in E.E. 1925, College of Agriculture	
Shelton, Rose Forest	Ky.	and Mechanical Arts, Purdue Univ.	
Shelton, Rose Woods		Shim, Martha Pearl	D.C.
Shelton, Virginia	D.C.	Shim, Walter Robert	N.Y.
Shelton, University of Buffalo	D.C.	A.B. 1925, Elizabeth College	
Shelton, Lee	N.Y.	Shim, Kell Thomas	W.Va.
Shelton, William		Shim, Maria Victor	Md
Shelton, Indiana University	Md	B.S. 1925, Montana State College	
Shelton, Louise	Md	Shim, Robert Delaney	Va.
Shelton, Hart College	D.C.	Shim, Laura Jane	Va.
Shelton, University of Maryland		Shim, Margaret Kay	Pa.
		Shim, Daniel Thomas	Md
		Shim, John Francis	D.C.
		B.S. 1924, D.C. Teachers College	
		Shim, Thomas Harry	Md

[illegible]

Students Registered

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Richard Joseph	Md	Saporiti, Gloria Bernadette	Pa
George Washington		Schultz, Susan R. Reed	D.C.
Thailand		Shed, Charles Thomas	Va
Chiangmai University		A.B. 1962, University of Pennsylvania	
University of Texas		Shover, George Allen	N.Y.
George Washington	D.C.	A.B. 1962, American International College	
James		Skolnick, Florence Harriett	Md
Montana State	Md	Skolnick, Marvin Ralph	Md
		Na 1964, Henry Emerson	Pa
		A.B. in Ed. 1965, The George Washington University	
Brooklyn College	D.C.	Slone, Kenneth Norbert, Jr.	Minn
New York University		A.B. 1963, Columbia University	
Manhattan College	D.C.	A.M. 1967, The George Washington University	
University of Miami	Md	Skowron, Nicholas	Pa
George Washington		B.S. 1966, M.S. 1967, Pennsylvania State University	
May 1		Slaback, Stephen Eliot	Okl
Robert Deep	D.C.	B.S. 1967, Northwestern University	
M.I.T. University of	Va	Slack, Arthur Franklin	D.C.
		B.S. 1967, Johnson C. Smith University	
John Kahler, Jr.	Va	Slater, Eugene Robert	Pa
	D.C.	Slaughter, Evelyn Pluebe	D.C.
White Oak	D.C.	Savin, Richard Edward	Md
Marion Paul	D.C.	Schmitt, Stephen	D.C.
Edward	D.C.	Schmitt, Maria Ellen	Md
State University	Org.	Schuler, Alexander, Jr.	Va
College		Schuyler, Mary Clarke	Va
University of California	Va	A.E. 1966, Gardner College	
State College	Va	Schuyler, Rosalyn Susan	N.Y.
University of	D.C.	Schuyler, Mary Louise	D.C.
		Schuyler, David Wayne	D.C.
		A.B. 1967, Washington and Lee University	
	Ark	Shaw, Margaret Taylor	Md
		A.B. in Gen. 1967, The George Washington University	
	Va	Shaw, Charles Paul	D.C.
		B.S. 1964, College of William and Mary	
	Va	Shaw, Nicholas Andrew	Md
	W.Va.	B.S. 1967, University of Maryland	
	Md	Shaw, Jonathan Welch	D.C.
	D.C.	A.B. 1967, Yale University	
	Md	LL.B. 1968, The George Washington University	
	D.C.	Shaw, Richard Carlton	Va
		B.S. in Ed. 1967, Madison College	
	Md	Shaw, John Henry	Md
		B.F.A. 1967, The George Washington University	
	Md	Shaw, Victoria Jean	N.Y.
	Va	A.B. 1966, Maryland College	
		A.M. 1968, California University	
	Va	Shaw, Joyce Michael	Pa
	Va	Shaw, Michael	Pa
	N.C.	Shaw, Sara Davis	D.C.
		Shaw, Henry Lawrence	Md
		Shaw, Timothy Ruth	Qu
		Shaw, Emma Jane	Va
	Va	B.S. 1967, U.S. Merchant Marine Academy	
	Kan	Shaw, Charlotte Maestre	Va
		Shaw, Len Joseph	Va
	Pa	Shaw, Susan Ann	D.C.
	N.Y.	Shaw, D. C. Lehigh College	
	D.C.	Shaw, Wayne Nelson	D.C.
	D.C.	Shaw, Thomas Paul, Jr.	Minn
		B.S. in Ch. 1967, Madison College of Music and Technology	

Smith, Ronald Eugene	Va	Smith, Frederic Newcomb	
A.B. 1917, College of the City		A.B. 1908, The George Washington	
of New York		University	
Smith, Nancy Jane	N.Y.	Smith, Frederick Wilson, Jr.	
Smith, Robert Raymond Stevens, Jr.	D.C.	Smith, Gladys Holmes	
B.A. 1918, Cornell University		B.S. 1948, J. C. Leakey College	
Smeyan, Irwin L.	Fla	A.M. in Ed. 1947, The George	
B.S. in M.E. 1955, University of		Washington University	
Michigan		Smith, Gordon Lewis	
Smiley, Jerry Coleman	Tenn.	B.S. 1928, Michigan State	
Smiley, Michael Alan	Md.	Norfolk College	
Smith, Anne Oliver	Md.	Smith, Henry Paul	
B.S. in P.E. 1948, The George		Smith, Ira	
Washington University		B.S. 1948, Howard University	
Smith, Ada Mae	D.C.	Smith, James Conner	
B.S. 1948, D. C. Teachers College		A.B. 1908, University of Florida	
Smith, Van Herman, Jr.	Ohio	Smith, James Paul	
A.B. 1946, Ohio Wesleyan University		B.S. 1944, State Dakota School of	
Smith, Alan	D.C.	Michigan Technological	
Smith, Anna Davis	Va	Smith, James Paul	
Smith, Ann Marie	D.C.	Smith, James Monroe	
Smith, Anne Lee	Md.	Smith, James Monroe	
B.S. in P.E. 1948, M.S. 1950, The		B.S. 1946, University of Rhode Island	
George Washington University		Smith, Joe Marc	
Smith, Arthur William	Mich.	Smith, John Francis	
B.S. in E.E. 1948, U.S. Air Force		J.C.R. 1944, J.C.R. 1944, Catholic	
Institute of Technology		University of America	
Smith, Barbara Ann	Md.	Smith, John George	
Smith, Barbara Anne	Calif.	B.S. 1955, Columbia University	
A.B. 1946, The George Washington		Smith, John Henry	
University		Smith, John L. S. Naval Academy	
A.M. 1948, Mills College		B.S. 1944, Johns Hopkins	
Smith, Brian Douglas	Md.	Smith, John Joseph	
Smith, Charles Neelott	Md.	A.B. 1955, St. John's University	
Smith, George Edgar	Ohio	Smith, Joseph Edward	
Smith, Christopher Allan	Conn.	B.S. 1941, Georgetown University	
A.B. 1944, Harvard University		Smith, Joseph Francis, Jr.	
Smith, Clark Lee	D.C.	Smith, Joseph Francis, Jr.	
Smith, Colin Alexander	D.C.	A.B. 1946, Washington Masonic	
B.S. 1944, University of Colorado		College	
Smith, Cynthia Gordon	Texas	Smith, Katherine Virginia Rice	
Smith, Daniel Joseph	Miss.	Smith, Kathryn Anne	
Smith, Delana Cary	Va	Smith, Keith Eugene	
A.B. 1946, Gateway City College		A.B. 1946, Howard University	
Smith, Donald Raymond	D.C.	Smith, Kirk Brandon	
A.B. 1946, University of Vermont		Smith, Lawrence Richard	
Smith, Donald David	Md.	Smith, Lee Eugene	
Smith, Donald James	Mass.	A.B. 1946, Sonoma College	
Smith, Donald LeRoy	Iowa	Smith, Lee Louis	
B.S. 1944, Iowa State College		B.S. 1942, Maryland State Teacher	
Smith, Donna Mae Anne	N.I.	College, Piquette	
Smith, Donna Elizabeth	D.C.	Smith, Leonard William	
B.S. 1942, D. C. Teachers College		A.B. 1942, The George	
Smith, Dorothy	Md.	Washington University	
Smith, Dorothy Beryl	Va	Smith, Leonard William	
Smith, Eric Clarence, Jr.	D.C.	A.B. 1942, The George	
A.B. in Govt. 1947, The George		Washington University	
Washington University		Smith, Mary Helen	
Smith, Earl Richard	Va	Smith, Mary Louise	
L.B. 1942, Columbia University		B.S. 1944, University of Chicago	
Smith, Edgar Lawrence, Jr.	Va	A.M. in Ed. 1944, The George	
A.B. 1944, Harvard University		Washington University	
Smith, Edwin Stanton	S.D.	Smith, Michael Paul	
Smith, Eugene Emerson	Va	A.B. 1942, A.M. 1944, University	
Smith, Eugene Sue	D.C.	of Texas	
B.S. 1944, Missouri State College		Smith, Morton Alan	
Smith, Elizabeth Maudie	Oreg.	A.P. 1944, University of Florida	
Smith, Elizabeth Wanda	D.C.	L.T. 1944, University of North	
A.B. 1946, D. C. Teachers College		Carolina	
Smith, Frank Rayburn	D.C.	Smith, Muriel Sanders	
Smith, Frank M.	Va	E.J.B. 1944, Oklahoma College for	
		Women	
		Smith, Nora Obidene	
		A.B. in Govt. 1948, The George	
		Washington University	

Students Registered

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Students Registered			689
Over Samuel, Jr.	D.C.	Smother, Lee Brandon	Va
St. Augustine's College		Smother, Claude Elmer	D.C.
Washington Missionary	Mid	Smother, Joseph Foster, Jr.	N.Y.
		Smoot, Frank Pearl	Va
East Hope		B.S. 1945, University of Virginia	
Harvey R. H.	Va	Smock, Elba Margaret	D.C.
Wayne Gateway	Va	A.B. 1947, Washington College	
John M.	Va	Smother, Jane Estelle	Pa
John S. Silva	Va	Smother, William Edward	Pa
Ruth L. Jones	Mid	Smother, Robert	Va
Reynolds R. R.	N.C.	Smoot, Ralph Bruce	Mid
St. George's University	Mid	B.S. & M.F. 1948, Carnegie Institute of Technology	
Reynolds Thomas	Pa	Smother, Carl Moore, Jr.	Va
Reynolds	D.C.	Snodgrass, Marshall R. Reynolds	D.C.
Reynolds	Pa	Snook, Robert L.	Va
Reynolds		Snook, Anna Marie	Pa
Reynolds		Snook, Michael Allen	N.Y.
Reynolds		Snook, John Lee	Va
Reynolds		B.S. & Ch.E. 1948, University of	
Reynolds		Massachusetts	
Reynolds		Snook, Edwin Walker	Va
Reynolds		A.B. 1947, Princeton University	
Reynolds		Snook, Elton Lee	Mid
Reynolds		Snook, James Edward	Pa
Reynolds		Snook, James Edward	D.C.
Reynolds		Snook, Linda Belle	Va
Reynolds		Snook, William Henry	Va
Reynolds		B.S. in Physics 1947, State University of Iowa	
Reynolds		Snook, Charles M. and	D.C.
Reynolds		Snook, Stanley	D.C.
Reynolds		Snook, Arthur Henry	Pa
Reynolds		Snook, Arnold Lee, Jr.	Va
Reynolds		Snook, Dennis L.	Mid
Reynolds		A.B. 1947, University of Maryland	
Reynolds		Snook, Elton Lee	N.Y.
Reynolds		Snook, George R. R.	Pa
Reynolds		A.B. 1944, Tennessee State University	
Reynolds		Snook, George	N.Y.
Reynolds		B.S. 1948, Syracuse University	
Reynolds		Snook, Marvin	D.C.
Reynolds		P.E. 1944, Cornell University	
Reynolds		Snook, Royce W. Jr.	Va
Reynolds		A.B. 1944, Washington College	
Reynolds		Snook, Samuel H. Hart	D.C.
Reynolds		Snook, William S.	Mid
Reynolds		A.B. 1944, M.S. 1947, University of Florida	
Reynolds		Schick, Bernard George	D.C.
Reynolds		Schick, Henry Chalmers	Pa
Reynolds		B.S. 1947, University of Oklahoma	
Reynolds		Schick, Alice Ward	Va
Reynolds		Schick, Janet Smith	Ind.
Reynolds		Schick, Leo	Ind.
Reynolds		Schick, Robert R.	D.C.
Reynolds		Schick, William	D.C.
Reynolds		A.M. 1948, M.S. & L.S. 1950, University of Virginia	
Reynolds		Schick, Alexander Gregory	N.Y.
Reynolds		Schick, Stanley Warren	D.C.
Reynolds		Schick, George Andrew	Pa
Reynolds		Schick, Alice Lee	D.C.
Reynolds		B.S. & P.E. 1948, The George Washington University	
Reynolds		Schick, Barbara Ann	Calif.
Reynolds		A.B. 1941, A.M. 1944, University of California	
Reynolds		Schick, Mary D.	Va
Reynolds		Snodgrass, Daniel Edmund	Va

Solter, Myron Woodruff	D.C.	Spates, James Edward	Pa.
A.B. 1935, The George Washington University		B.S. in M.L. 1936, Purdue University	Pa.
Somazzi, Horacio	Nicaragua	Spaul, Katherine Kathie	Pa.
Law Degree 1948, University of Nicaragua		Spaul, Harry Lee	N.Y.
Somer, Emanuel Philip	N.Y.	Spears, Edward Dever	
B.B.A. 1937, College of the City of New York		Spears, George Watkins	
Somers, James Peter	Va.	A.B. 1947, Howard College	
A.B. 1938, University of North Carolina		A.M. 1949, Columbia University	
Somers, Marion	D.C.	Specht, Robert Marvin	
Somersville, Harrison, Jr.	D.C.	Spick, Renee A.	
B.S. 1935, Washington Lee University		A.B. 1944, Western Kentucky State College	
Sommer, Michael Sander	D.C.	Spicer, George Ivan	
Sommer, Peter Rudolph	D.C.	Spicer, Edward A.	
Sommer, Walter Calvin	Md.	A.B. 1939, Williams College	
B.S. 1941, Miami University		Spice, Donald John	
Sommerskamp, Charles Hamilton	Md.	B.E. 1937, University of Florida	
B.S. 1937, University of Maryland		Spier, Hugh Lawrence	
Sommers, John Walter	Wash.	A.B. 1932, Western Maryland College	
Sommersstein, Alvin	Va.	A.M. 1936, Columbia University	
Somson, Jean Percock	Korea	Spennet, Rufus George	
Song, Ch. Shun		B.S. 1931, U. S. Military Academy	
A.B. 1946, Seoul National University, Korea		Spencer, Harrison Michael	
Sorrells, Herbert Jerome	Md.	A.B. 1937, University of Idaho	
Sorbus, Yook I.		Spencer, John A.	
B.E. 1934, Brooklyn Polytechnic Institute		Spencer, Donald Bruce	
Sorkin, Marilyn Michael	Md.	B.S. 1939, University of Maryland	
Sorn, Judith Mary	Calif.	Spencer, Jack Earl	
Sorkin, Judith Michael	D.C.	B.S. 1945, Kent State College	
B.S. 1948, Ohio State University		M.S. 1946, University of Wisconsin	
Sorokin, Stanley Robert	Va.	Ph.D. 1949, Ohio State University	
Sorrell, Frederick Maurice	D.C.	Spencer, John Richard	
Sorrell, Rose Margaret	Calif.	B.S. 1939, University of Illinois	
Sosa, Ulises Chismore	Va.	Spencer, Margaret	
Sotak, Laurens Catherine	D.C.	Spencer, Margaret Ann	
Sotomayor, Alexander Helen	Va.	Spencer, Ralph Edwin	
Sotter, Frank James		B.S. in C.E. 1931, Howard University	
B.E. 1928, LL.B. 1931, The George Washington University		Spencer, Thomas Kinler	
Sotter, Marlyn Madeline	Md.	B.S. 1947, U. S. Military Academy	
Sotz, William Lanning Jr.	Pa.	Spencer, Wayne D.	
A.B. 1939, Harvard University		A.B. 1937, University of Maryland	
Sotter, Richard Lawrence	Va.	Sperrin, Joseph Ben	
Sotter, Michael Anne		A.B. 1937, College of the City of New York	
Sotter, John Ernest		Sperrin, Samuel	
B.S. 1938, University of Louisville		A.B. 1936, M.S. in Ed. 1938, College of the City of New York	
Sotter, Andrew J. Lee		Sperry, Michael Bert	
Sotter, Grace Kelly		Sperry, Herman E.	
A.B. 1941, Bowling Green College		B.S. 1936, Brooklyn College	
Sotter, Kathryn Robinson		Sperry, David	
Sotter, Marion Mild		A.B. 1937, The George Washington University	
Sotter, Florence M.		Sperry, Daniel Palmer	
Sotter, Ernesta Jean		A.B. 1935, University of Illinois	
Spaeth, Earl Eugene		B.S. 1936, University of Maryland	
A.B. 1936, Santa Clara College		Sperry, Mark Hamilton	
Ph.D. 1936, University of California at Los Angeles		Sperry, William Goldie	
Spate, Janet Elton		Sperry, Ann Emerson Jr.	
B.S. 1939, University of Tennessee		A.B. 1936, University of California at Los Angeles	
Spaul, Gene Henry		Sperry, John Jackson	
Spaulding, James Elizabeth		A.B. 1937, Union College	
Spaulding, Eugene Kelly		Sperry, Diana Dawn	
Spaulding, Ronald Eugene		Sperry, T. Robert	
Spaulding, Arthur Lawrence		Sperry, Robert The George Washington University	
Spaulding, Paul Albert		B.E. 1938, The George Washington University	
Spaulding, Susan Nora		Sperry, Nicholas	
Spaul, Herbert Ann		Sperry, J. N.	
		Sperry, Carl August	
		A.B. 1941, The George Washington University	

Students Registered

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Stacy, Joseph, Aaron	Mex	Stanley, Frank Leslie	D C
Stacy, Joseph, William	N Y	B.S. 1918, University of Illinois	
Stacy, Lawrence, Elmer	D C	Stacy, Harry	D C
Stacy, The George Washington		Stacy, Walter, Sonny	Ithaca
Stacy, John, Lee		Stacy, Francis, William	Va
Stacy, Mary, Ruth	D C	Stacy, Charles, Leroy	Va
Stacy, Thomas, James	Va	Stacy, Margaret, Adeline	Md
Stacy, Thomas, Henry	N C	B.S. 1912, Ed.M. 1915, University of Maryland	
Stacy, The George Washington		Stacy, David C.	Va
Stacy, John, Richard		B.B.A. 1920, Southern Methodist University	
Stacy, John, Roy	Ont	Stacy, David, Isaac	Va
Stacy, George, George	M	Stacy, William, Edward, Jr.	Va
Stacy, George, Louis	Va	Stacy, David, George, May	Va
Stacy, George, John	Va	Stacy, George, O.	Ky
Stacy, John, Lee	Va	Stacy, Bernard, General	Va
Stacy, George, George	N C	B.S. 1911, Yale University	
Stacy, George, State College	Md	Stacy, Francis, Ann	D C
Stacy, George, State College	D C	Stacy, George, George	Md
Stacy, George, State College	Pa	B.S. 1911, D. C. Teachers College	
Stacy, George, State College		Stacy, Lawrence, Wendell	N J
Stacy, George, State College		A.B. 1915, Leno University	
Stacy, George, State College	W Va	Stacy, Newman, Taylor	D C
Stacy, George, State College	Va	B.S. 1915, A.M. 1918, University of Illinois	
Stacy, George, State College	D C	Stacy, Thomas, F.	D C
Stacy, George, State College	Va	B.S. 1911, D. C. Teachers College	
Stacy, George, State College		Stacy, Mary, Mabel	Va
Stacy, George, State College	D C	A.B. 1917, The George Washington University	
Stacy, George, State College	Md	Stacy, John	Md
Stacy, George, State College	Md	A.B. 1911, Brooklyn College	
Stacy, George, State College	Iowa	A.M. 1911, The George Washington University	
Stacy, George, State College	Va	Stacy, David, E.	D C
Stacy, George, State College		A.B. 1911, University of Wisconsin	
Stacy, George, State College		A.M. 1915, University of Chicago	
Stacy, George, State College	Pa	Stacy, Andrew, John	Va
Stacy, George, State College	Md	Stacy, George, George, Norman	Md
Stacy, George, State College	Md	A.B. 1915, University of Michigan	
Stacy, George, State College		Stacy, Edward, Mabel	Md
Stacy, George, State College		A.B. 1915, The George Washington University	
Stacy, George, State College	Md	Stacy, Charles, George	Md
Stacy, George, State College	D C	B.S. 1911, Maryland State Teachers College, Frederick	
Stacy, George, State College	Va	Stacy, Helen, John	D C
Stacy, George, State College	Va	A.B. 1915, The George Washington University	
Stacy, George, State College	Iowa	Stacy, James, Lawrence	N D
Stacy, George, State College	D C	B.S. 1911, M.E. 1915, State Teachers College, Chicago	
Stacy, George, State College		Stacy, Robert, Frank	W Va
Stacy, George, State College	Md	A.B. 1915, University of Wisconsin	
Stacy, George, State College		Stacy, Mary, John	Md
Stacy, George, State College		B.S. 1915, University of Wisconsin	
Stacy, George, State College		Stacy, George, George	Va
Stacy, George, State College		A.B. 1915, Washington and Jefferson College	
Stacy, George, State College		M.C. 1915, Pennsylvania State University	
Stacy, George, State College	Md	Stacy, George, John	Ky
Stacy, George, State College		Stacy, George, John	D C
Stacy, George, State College		Stacy, George, John	D C
Stacy, George, State College		Stacy, George, John	Texas
Stacy, George, State College		Stacy, George, John	W Va
Stacy, George, State College		Stacy, George, John	

Steele, Betty Deen	Tenn.	Stephanian, Alice Ann
Steele, Colin Garment, Jr.	Va.	Stephanian, Burton William
B.S. in Ed. 1956, University of Virginia		A.P. 1958, American University
Steele, Jack Lee	D.C.	Stephens, David Joseph
Steele, Kenneth Martin	D.C.	Stephens, Virginia Booth
Steele, Sam Isaac	Va.	A.B. 1942, University of Utah
Steele, William Gilbert	Ky.	Stephens, William Royce, Jr.
A.B. 1935, Home College		B.S. 1946, B.S. in C.E. 1947, Duke University
Steen, Thomas Crawford	Va.	Stephenson, Clarence Billy
Steen, Helen Hammond	Md.	B.S. 1944, U.S. Naval Academy
A.B. 1933, A.M. 1934, University of Wisconsin		M.F.A. 1938, The George Washington University
Steep, Caroline Francis	D.C.	Stephenson, Donald Carlos
Steens, Doris Elin	Nehr.	Stephenson, Timothy
B.S. 1933, A.M. 1938, University of Nebraska		Ph.D. 1946, B.S. 1947, University of Chicago
Stefanyk, David	Md.	Stephenson, Marjorie Dee
A.B. 1949, A.M. 1951, Columbia University		Stevens, Charles Albert
Steffel, Sandra Lee	D.C.	Stevens, Doris Jean
Steffens, Robert Francis	Pa.	A.B. 1948, Miss. Washington College
Steffens, L. Beth	Md.	A.B. 1948, W. Virginia College
Steffens, Victor Lyman	D.C.	Stevens, Marjorie Frances
A.B. 1950, University of Colorado		A.B. 1947, The George Washington University
Stee, Charles Alvin	Md.	Sterling, William Robert
B.S. 1950, D.C. University		B.S. 1954, Philadelphia College of Pharmacy
B.Ch.E. 1950, University of Florida	Ohio	M.S. 1954, Ohio State University
Stein, Donald Philip		Sterman, Barry Herman
B.S. 1958, Case Institute of Technology		A.B. 1953, Ames Short College
Stein, Ida David	N.J.	A.M. 1956, The George Washington University
B.S. 1956, Rutgers University		Stern, Lucille
Stein, Mildred Fishman	Md.	A.B. in Gen. 1955, The Great Washington University
A.B. 1944, Columbia University		Stern, Herman J.
A.M. 1956, Bryn Mawr College		B.S. in E.E. 1957, Drexel Institute
Stein, Murray Robert	D.C.	of Technology
B.S. 1951, D.C. Teachers College		Stern, Howard Lee
Stein, Selma	N.M.	Stern, Myron Gus
Stein, Walter M.	N.Y.	A.B. 1947, Brooklyn College
Steinberg, Harold Lewis		Stern, Sheldon
A.B. 1950, Brooklyn College	Md.	B.S. 1953, New York University
Steinhaus, Harry		A.B. 1956, M.S. in Ed. 1958, Queens College
B.S. in M.E. 1945, New York University	D.C.	Stern, Thomas M.
Steinberg, David David		B.S. 1957, Baylor College
B.S. 1958, California University	Md.	Stern, Robert Ray
Steinberg, I. David	N.J.	Stern, Robert L.
Steinberg, Susan Barbara	D.C.	B.S. 1954, Iowa State College of Agriculture and Mead. Arts
Steiner, Carl		Ph.D. 1958, Western Reserve University
A.B. in Ed. 1958, The George Washington University	D.C.	Stevens, Daniel Cordaker
Steiner, Frederick David		Stevens, Howard M.
A.B. 1941, University of Chicago	D.C.	M.A. B. 1949, Oberlin College
Steinhardt, Louis Emanuel	D.C.	Stewart, Richard Grant
Steinman, David Perry		Stewart, Ronald S.
Steinman, Robert Henry	Md.	A.B. 1958, Boston University
Steinman, George Louis	N.Y.	Stevens, David H.
A.B. 1957, Louisiana University		Stevens, Eugene George Sykes
Steinick, Maurice	N.Y.	B.S. 1955, The George Washington University
Steinick, Mary	Md.	Stevens, Harold Fred
B.S. 1950, University of Illinois	Calif.	B.S. 1957, Ohio State University
Steenke, Robert Eugene		Stevens, Robert L.
A.B. 1950, Sacramento State College	Md.	Stevens, Louis Louis
Stempier, George Louis		Stewart, Carolyn H.
B.S. 1957, University of Maryland	Md.	A.B. 1957, West Virginia State College
Stempier, Paula Sandra	Wash.	A.M. 1950, State University of Iowa
Stempier, John Cameron	D.C.	
Stempier, Edwin Anthony	Minn.	
Stempier, Jane Ann		
A.B. 1957, Clark College	Va.	
Stensness, Martha Mae		

Students Registered

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Students Registered			693
Alton, Dale Deane			
Alton, John Hopkins University	Calif	Stinson, Virginia	D.C.
Alton, David J. Lincolnton		Stinson, Frank J. Doctor 1945	
Alton, Washington and Lee	Va	Law School, Baltimore, Romania	
Alton, E. Delano		Stoker, Wade Clark	Utah
Alton, Glenn Morris, Jr.	D.C.	B.S. 1948, Brigham Young University	
Alton, U.S. Naval Academy	Va	Stoker, James Daniel, Jr.	Va
Alton, John Francis		B.S. in E.E. 1947, Tulane University	
Alton, Georgetown University	Md	JD 1948, The George Washington University	
Alton, Miami Univ.		Stones, Richard Arthur	Md
Alton, University of Virginia	Md	A.B. 1941, St. Michael's College	
Alton, Paul Kennedy		Stones, Thomas Van Cleave	Md
Alton, Platte River	Md	Stucky, Frederick Thomas	D.C.
Alton, Maryland State College	Del	A.B. 1941, A.M. 1944, LaSalle College	
Alton, Paul Hunk		Stucky, Elmer Henry	D.C.
Alton, Paul Henry	Md	A.E. 1941, Westminster College	
Alton, Beverly, Ind.	Calif	Stucky, Louis Emerson	Pa
Alton, Brigham Young University	Idaho	Stucky, Alexander Gustafson	Md
Alton, Paul Herbert		Doctor in Law, same University of	
Alton, William Wallace III	D.C.	Orleans, Hawaii	
Alton, William Wallace	Va	Stone, Frank Bradford	Fla
Alton, University of Oregon	Va	B.S. 1941, Union College	
Alton, William Herbert		M.S. 1941, Ohio State University	
Alton, Lehigh University	D.C.	Stone, Gregory King	Va
Alton, Reta	N.C.	Stone, Gail Christine, Jr.	Va
Alton, University of North		B.E.E. 1948, University of Florida	
Alton, Charles Abery		Stone, Joseph Charles, Jr.	Va
Alton, H. West Virginia	Va	B.S. 1941, Iowa State College of	
Alton, John Lincoln		Education and Mechanical Arts	
Alton, William Raymond		Stone, John George III	Md
Alton, St. Mary's College	Md	Stone, Vladimir	Md
Alton, William R. Myers		Stone, Roy Edwin	N.C.
Alton, Yale University	Va	B.E.E. 1948, North Carolina State	
Alton, Edward Charles		College	
Alton, Edward Charles	Md	Stone, Robert Oliver	Md
Alton, Hart Lane College	Va	Stone, Samuel Buckner	Va
Alton, University of North	Va	B.S. in E.E. 1948, Virginia	
Alton, Charles Erbert		Engineering Institute	
Alton, Elizabeth Laura	D.C.	Stone, Steven Franklin	Va
Alton, The George Washington	D.C.	B.S. 1947, Romanian Polytechnic	
Alton, George		Institute	
Alton, George		Stone, Stephen Calvert	Va
Alton, George		Stoneman, Elmer Anthony	Va
Alton, George		Stone, Howard Franklin	Va
Alton, George		B.S. 1941, U.S. Navy Academy	
Alton, George		M.S. 1941, Massachusetts Institute	
Alton, George		of Technology	
Alton, George		Stoneman, Leonard John	D.C.
Alton, George		A.B. 1941, St. Francis Seminary, W.	
Alton, George		Stone, Charles O'Connell, Jr.	Va
Alton, George		Stone, Louis Kent	Va
Alton, George		Stone, Kate Margaret	D.C.
Alton, George		Stone, Elmer C.	Md
Alton, George		Stone, Richard Arnold	Va
Alton, George		Stone, Howard Elmer	Md
Alton, George		A.B. 1941, The George Washington	
Alton, George		University	
Alton, George		Storley, Ruth Yarn	Md
Alton, George		B.S. 1941, West Virginia University	
Alton, George		A.M. 1941, University of Maryland	
Alton, George		Storley, Leonard H.	Md
Alton, George		Storley, Frank Lemon	Va
Alton, George		Storley, John H.	Va
Alton, George		Storley, William Robert, Jr.	D.C.
Alton, George		Storley, Elmer Carson	D.C.
Alton, George		Storley, John H.	Va
Alton, George		Storley, George Fred	D.C.
Alton, George		B.S. in E.E. 1944, Pennsylvania	
Alton, George		State University	
Alton, George		Strick, Carolyn Margaret	D.C.
Alton, George		A.B. 1948, University of Denver	

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[illegible]

Sylvor, Stephen McClellan
B.S. 1929, Hampton Institute
Sykes, Gail Annabelle
Sykes, Grant Rosard
B.B.A. 1958, Tulane University
A.M. in Govt. 1958, The George Washington University
Sykes, Mary Ann
Syvester, Anne Louise
Syvester, Donald Hester
B.S. 1932, Murray State College
Syvester, Edward J.
B.S. 1918, Ed.M. 1926, Springfield College
Syvester, Rita Davis
A.B. 1929, Machattanville College at the Sacred Heart
Szymanski, Leonard Louis
A.B. 1923, Syracuse University
Szymanski, James Kraft
Szymanski, Clement A.
A.B. 1934, King's College
Szynski, Margaret Judith
Szymanski, Stephen Francis, Jr.
Szymanski, Adam
Szymanski, Helen
Szynski, Anna Kenewe
Szynski, Michael
Szymanski, Chester Julius
B.S. 1936, U. S. Maritime Marine Academy
Szymanski, Norbert Harold

T

Tacy, Emma Arnold
Taddei, Ferdinando Joseph
B.S. 1931, M.S. 1937, Israel Institute of Technology
Taddei, Dominic Lynn
Taddei, Joseph Lee
Taddei, James Matthew
Taddei, Maria Paul
Taddei, Joseph
A.B. 1925, Temple University
Taddei, Ralph Raymond
A.B. 1924, University of Florida
Taddei, Abe Malachuk, Jr.
B.B.A. 1937, University of Mississippi
Taddei, Carlos Satoru
Taddei, Albert Edward
A.B. 1927, The George Washington University
Taddei, George Seyfar
B.S. 1931, University of California
Taddei, Louis Louis
Taddei, Maurice Nathan
A.B. 1924, The George Washington University
Taddei, Marion Gerald
B.S. in Ed. 1929, Nebraska State Teachers College
Taddei, Thomas Francis
Taddei, William Gaven
Taddei, William Teller
B.S. in E.E. 1928, Alabama Polytechnic Institute
Taddei, Edith
Taddei, Henry
Taddei, Maudie
Taddei, Mary Cheng
Taddei, Paul

Taddei, Charles Reed
A.B. 1927, Pennsylvania State University
Taddei, Louis Bakulder
Taddei, William Hamilton
Taddei, Robert Henry
B.S. in B.A. 1927, Northwestern University
Taddei, Vito
Taddei, M. Alvin
Taddei, Albert Paul
Taddei, Robert Louis
Taddei, William Robert
Taddei, Helen
Taddei, Alice Ray
Taddei, Thomas James
B.S. in E.E. 1927, University of Pittsburgh
Taddei, Jack Kenneth
Taddei, James Kenneth
Taddei, Jean
A.B. 1928, Brown University
Taddei, Harry Raymond
A.B. 1927, University of Virginia
Taddei, Robert Lynn
Taddei, James Joseph
B.S. 1924, Hyattsville State Teachers College
Taddei, University of Massachusetts
Taddei, Ming A.
Taddei, Benjamin College
A.B. 1927, University of Missouri
A.M. 1931, University of Missouri
Taddei, Katherine Douglas
A.B. 1928, University of Virginia
Taddei, Harry
B.S. 1927, University of Maryland
Taddei, Charles Harold
B.E.E. 1924, Georgia Institute of Technology
Taddei, Charles Kenney, Jr.
B.S. 1924, University of Oklahoma
Taddei, Clara Louise
Taddei, Joseph Albert, Jr.
Taddei, David Andrew
Taddei, Don Richard
B.S. in M.E. 1924, Purdue University
Taddei, Eugene Joseph
A.M. 1928, University of Chicago
Taddei, Frank William
B.S. 1927, U. S. Naval Academy
Taddei, Massachusetts Institute of Technology
Taddei, George Bruce
Taddei, Harry Maxwell
B.S. 1924, D. C. Teachers College
Taddei, Jack Gilbert
Taddei, James Edward
Taddei, James Pinckney
Taddei, James James
B.S. 1928, Miami University
Taddei, James Louis
Taddei, Joseph Louis
B.S. 1924, U. S. Naval Academy
Taddei, Keith Homer
B.S. 1924, D. C. Teachers College
Taddei, Lorena Agnes
Taddei, Mary Nell
Taddei, Maudie Alice
B.S. 1927, Bennett College

Students Registered				697
AB	Parsons Ann Kressly		Teacher, David	Va
AB	1932, College of Wooster		B.S. 1935, Newark College	
AB	Parsons Anton Lee	Pa	of Education	
AB	Parsons Sue	Va	Teacher, Gary Eugene	D.C.
AB	Parsons H.	A.C.	Teacher, Zula Lee	Md
AB	Parsons Harper	D.C.	Teacher, John Smith, Jr.	Md
AB	Westerville, Kuhlman	Va	AB 1937, The George Washington	
AB	1937, University of	D.C.	University	
AB	Parsons Omar, Jr.		Teacher, Constantine Louie	W.V.
AB	1937, University of Mississippi	Md	Teacher, Morris S.	D.C.
AB	Parsons Richard Edward		B.B.A. 1935, College of the City of	
AB	1937, Ed. 1932, D. C. Teachers	D.C.	New York	
AB	Parsons Barbara		L.L.B. 1935, Yale University	
AB	Parsons Ferdinand	Va	Teacher, Henry M. Bette, Jr.	Va
AB	Parsons Anthony College	Md	Teacher, Leonard Louie	Md
AB	Parsons Charles		B.S. 1936, University of Minnesota	
AB	Parsons Walter William	Va	Teacher, Stephen Arnold	Md
AB	Parsons Ned	Va	Teacher, Patricia Benbow	Va
AB	Parsons Goodard College	Ohio	Teacher, Thomas Clark	Va
AB	Parsons Joseph		A.B. 1937, Stanford University	
AB	Parsons Gena	D.C.	Teacher, George M. Lee	Md
AB	1937, University of Madrid	Spain	A.B. 1934, Stanford College	
AB	Parsons William Eugene		Teacher, Charles Charles	Md
AB	Parsons Joe Ray	N.Y.	B.S. in C.E. 1937, University of	
AB	Parsons Coleman	D.C.	Vermont	
AB	1937, University of Southern	Mass	M.S. in L.S. 1937, Catholic University	
AB	Parsons Helen Klinker		of America	
AB	Parsons George		Teacher, Eugene Alfred	D.C.
AB	Parsons Wood College	Md	B.S. 1935, Georgetown University	
AB	Parsons Milton	N.Y.	Teacher, Eugene	Pa
AB	Parsons George University		A.B. 1935, Beaver College	
AB	Parsons Robert Robert	D.C.	Teacher, Quail Van	Vietnam
AB	1937, West Virginia	Md	Teacher, Albert David	Md
AB	Parsons James University of Michigan		B.S. in C.E. 1935, Drexel Institute	
AB	Parsons Arthur College		of Technology	
AB	Parsons Leonard Blum	Md	Teacher, Constantine Felling	D.C.
AB	1937, University of Richmond		Teacher, Betty Lee	D.C.
AB	Parsons Richard Louie	Md	A.B. 1935, Williams College	
AB	Parsons George University	N.I.	Teacher, Carl Otto	D.C.
AB	Parsons George Howard		B.S. 1937, Texas College of Arts	
AB	1937, The George Washington	D.C.	and Sciences	
AB	Parsons Mary		Teacher, Catherine Olivia	Va
AB	1937, Drexel Institute	Md	Teacher, David L.	Md
AB	Parsons Lee		A.B. 1935, Virginia Union University	
AB	Parsons West Virginia University	W.Va	Teacher, Duane, Washington	N.I.
AB	1937, University of	D.C.	University	
AB	Parsons John, Jr.		Teacher, Edward Jerry	Pa
AB	1937, Missouri college	Md	Teacher, Ford Lewis	N.C.
AB	Parsons L. S.	Va	Teacher, Harriet Wendell	D.C.
AB	1937, University of North		B.S. 1934, Maryland State Teachers	
AB	Parsons Albert		College, Bowie	
AB	1937, University of Buffalo	D.C.	Teacher, Herman H.	Pa
AB	Parsons Thomas		A.B. 1935, Lincoln University	
AB	1937, Purdue University	Ind	Teacher, Jack Lee	Va
AB	Parsons Samuel		Teacher, James Anthony	Pa
AB	Parsons William		Teacher, James Arthur	N.C.
AB	Parsons Ronald		B.S. 1935, North Carolina College	
AB	1937, University of Pennsylvania		at Durham	
AB			Teacher, James Burke	Va
AB			A.B. 1935, William College	
AB			M.S. 1935, The George Washington	
AB			University	
AB			Teacher, James Rogers	Va
AB			B.S. 1935, Elizabeth University	
AB			Teacher, James William, Jr.	Md
AB			Teacher, James Lee	N.I.
AB			Teacher, Louis Allen	Va
AB			Md B. 1935, Chicago University	
AB			of Illinois	
AB			Md M. 1935, Northeastern University	
AB			Teacher, Jerry Felt	Org
AB			B.S. 1935, Oregon State College	

Thomas, John George	Md	Thompson, Milton Patterson	D.C.
B.B.A. 1944, University of Miami		B.S. 1938, Georgetown	
Thomas, Lois Banksville	Va	University	
A.B. 1944, Howard University		Thompson, Orden Clayton	
Thomas, Lou Campbell	Gr	Thompson, Redding Aycock, Jr.	
Thomas, Mable Drusilla	Md	B.A. 1948, North Carolina State	
B.S. 1944, Morgan State College		University	
A.M. 1945, New York University		Thompson, Richard Keith	
Thomas, Marjorie Hebert	D.C.	B.S. 1948, Butler University	
Thomas, Marjorie Phyllis	Va	Thompson, Richard Walter	
Thomas, Martha Lee	D.C.	Thompson, Robert	
Thomas, Mary Suzanne	Md	B.S. 1948, University of Illinois	
Thomas, May Anthony	D.C.	Thompson, Robert Tennis	
A.B. 1944, Howard University		Thompson, Roy Francis	
Thomas, Paul Norman	Va	B.S. 1947, Ohio State	
Thomas, Raymond Edward	Md	University	
A.B. 1945, A.M. 1957, The George		Thompson, Wesley Eugene	
Washington University		Thompson, William Burton	
Thomas, Richard Glen	Va	B.C.E. 1947, Northwestern University	
B.S. in B.A. 1948, Kent State		Thompson, William Frederick	
University		B.S. 1947, The George Washington	
Thomas, Richard Marvel	Conn	University	
B.S. 1944, U.S. Coast Guard		Thompson, Lucetta Marion	
Academy		Thompson, Gladys Louise	
Thomas, Robert Seaford	Calif	B.F.A. 1947, Ohio	
A.B. 1941, Stanford University		State University	
Thomas, Roscoe Augustus	D.C.	Thompson, Marion Lemmon	
A.B. 1941, A.M. 1946, Catholic		Thompson, Richard Frank	
University of America		A.B. 1946, Iowa University	
Thomas, Sallie Sills	Md	M.P.A. 1948, Emerson University	
A.B. 1938, Shaw University		Thompson, David Webster	
Thomas, Sallie E. Thompson	Va	Thompson, Kyrle Mae	
Thomas, Valerie Ellen	Va	Thompson, Robert Lemuel	
Thomas, Virginia Carter	D.C.	Thompson, Berneice Lucretia	
Thomason, Barbara Ann	Va	B.S. 1948, St. Augustine's College	
Thompson, Casper Morris	Pa	A.M. 1941, Hampton Institute	
B.S. 1944, Pennsylvania State		Thompson, Thelma Anne	
University		Thompson, Thelma Beatrice, Jr.	
Thompson, Charles Andrew	Md	Thompson, Dora V. Teachers College	
B.S. 1947, Maryland State Teachers		B.S. 1944, D.V. Teachers College	
College, Frederick		Thompson, Leonard Henry	
Thompson, Dorothy M.	D.C.	A.B. 1947, University of Vermont	
B.S. 1944, D.C. Teachers College		Thompson, Martha Ella	
Thompson, Earl Lewis	Texas	A.B. 1945, Howard University	
Thompson, Edward Albert	Md	Thompson, Samuel Howard, Jr.	
Thompson, Ernest Albert		B.S. 1951, American Military Institute	
A.B. 1943, University of Western		Thompson, Valerie	
Ontario		A.B. 1948, The George Washington	
Thompson, Evelyn Ann Metre	N.I.	University	
Thompson, Eugene Gordon	Va	Thompson, Carter N. Julia	
B.S. 1948, Virginia Military Institute		B.S. 1946, D.V. Teachers College	
Thompson, George Ronald	Va	Thompson, Kyrle Frederick, Jr.	
Thompson, Harold Jonathan	Md	A.B. 1948, The George Washington	
B.S. 1947, M.S. 1949, State		Washington University	
University of Iowa		Thompson, Peter J. E.	
Thompson, James Leonard	Ky	Thompson, Robert William	
B.S. 1938, University of Kentucky		Thompson, Virginia Ely	
Thompson, Janet Smith	Md	A.B. 1944, Hunter College	
A.B. 1944, Madison College		A.M. 1945, Hunter College	
Thompson, Jean Augustine	Md	Thompson, James Leonard	
Thompson, JoAnne	D.C.	Thompson, William Robert, Jr.	
Thompson, John Charles	Va	Thompson, The George Washington	
B.S. 1957, University of Rochester		A.B. 1944, University of	
Thompson, Joseph Fisher, Jr.	Va	Thompson, Margaret	
Thompson, Karen Kay	Univ	Thompson, Margaret	
Thompson, Keith Ray	Md	A.B. 1944, University of Vermont	
Thompson, Leslie Bruce	Va	A.M. 1947, University of Detroit	
A.B. 1944, Stanford University		Thompson, James Anne	
Thompson, Mary Jane	D.C.	Thompson, A. C. Janet	
A.B. 1947, Duke University		A.B. 1947, Northwestern University	
Thompson, Marion Dorothea	Pa	A.M. 1947, Northwestern University	
Thompson, Mary Ellen	Va	Thompson, John Ross	
B.B.A. 1957, Ohio State University		B.S. 1947, University of Colorado	

Students Registered

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Dr. H. B. Jones, Jr.	D.C.	Talbot, John Charles	D.C.
Dr. M. J. Loria	N.Y.	A.E. 1934, University of Missouri	
Dr. J. L. Jones	Va.	Talbot, Stanley Hamilton	MI
Dr. J. L. Jones	Va.	B.S. 1934, University of Maryland	
Dr. J. L. Jones	Conn.	Talbot, Carl McDonald, Jr.	W.Va.
Dr. J. L. Jones		Talbot, David Ross	Va.
Dr. J. L. Jones		Talbot, John Hamilton	Pa.
Dr. J. L. Jones		B.S. 1934, University of Maryland	
Dr. J. L. Jones		Talbot, Raymond Lee	Va.
Dr. J. L. Jones		B.S. 1934, The George Washington University	
Dr. J. L. Jones		Talbot, Russell Hamilton	D.C.
Dr. J. L. Jones		Talbot, Edgar Edith	Pa.
Dr. J. L. Jones		Talbot, George James	N.C.
Dr. J. L. Jones		Talbot, Harold Lee	Pa.
Dr. J. L. Jones		Talbot, Leonard George	Va.
Dr. J. L. Jones		Talbot, Timothy	D.C.
Dr. J. L. Jones		A.B. 1934, Eastern Kentucky State College	
Dr. J. L. Jones		A.M. 1934, George Peck College	
Dr. J. L. Jones		Talbot, Charles Calvin	MI
Dr. J. L. Jones		B.S. 1934, 1948, Missouri State College	
Dr. J. L. Jones		Talbot, Lewis Austin Sumner	Va.
Dr. J. L. Jones		B.S. 1934, Pennsylvania State University	
Dr. J. L. Jones		Talbot, Ross Edith	MI
Dr. J. L. Jones		Talbot, Jane Mary	D.C.
Dr. J. L. Jones		Talbot, Mary Cunningham	Va.
Dr. J. L. Jones		Talbot, Robert Eugene	D.C.
Dr. J. L. Jones		A.B. 1934, Union College	
Dr. J. L. Jones		Talbot, Michael Alexander	MI
Dr. J. L. Jones		Talbot, John Samuel	Conn.
Dr. J. L. Jones		A.B. 1934, The George Washington University	
Dr. J. L. Jones		Talbot, James Augustus	Va.
Dr. J. L. Jones		B.S. 1934, Liberty and Evans College	
Dr. J. L. Jones		Talbot, John Hamilton	W.Va.
Dr. J. L. Jones		A.B. 1934, Eastern State College	
Dr. J. L. Jones		A.M. 1934, West Virginia University	
Dr. J. L. Jones		Talbot, John Peter	D.C.
Dr. J. L. Jones		Talbot, David Lee	D.C.
Dr. J. L. Jones		B.S. 1934, The George Washington University	
Dr. J. L. Jones		Talbot, Lillian Mildred	D.C.
Dr. J. L. Jones		A.B. 1934, Western Maryland College	
Dr. J. L. Jones		Talbot, Nancy Pauline	D.C.
Dr. J. L. Jones		A.B. 1934, University of Maryland	
Dr. J. L. Jones		Talbot, Roy R.	W.Va.
Dr. J. L. Jones		Talbot, Philip James	Va.
Dr. J. L. Jones		Talbot, George Clinton	D.C.
Dr. J. L. Jones		Talbot, John The George Washington University	
Dr. J. L. Jones		Talbot, John	
Dr. J. L. Jones		Talbot, John Henry	Conn.
Dr. J. L. Jones		A.B. 1934, University of North Carolina	
Dr. J. L. Jones		Talbot, William E.	N.C.
Dr. J. L. Jones		Talbot, Mary Grace	D.C.
Dr. J. L. Jones		Talbot, Mary F.	MI
Dr. J. L. Jones		Talbot, Philip Henry	MI
Dr. J. L. Jones		B.S. 1934, M.S. 1934, University of	
Dr. J. L. Jones		Talbot, William E.	Va.
Dr. J. L. Jones		B.S. 1934, M.S. 1934, M.A. 1934, University of	
Dr. J. L. Jones		Talbot, William R. H.	D.C.
Dr. J. L. Jones		B.S. 1934, University of	

Tonnes, Irene Leigh B.S. 1945; A.M. 1949, Virginia State College	Va	Trimas, Marvin B.S. in E.E. 1966, Pennsylvania State University	Pa
Townsend, David William, Jr. A.B. 1949, Yale University	Va	Trumble, Robert Samuel A.B. 1958, Stephen's State College	Md
Townsend, Robert Shaw A.B. 1951, University of Maryland	Md	Trumble, Thelma Clarence B.S. in B.A. 1942, New York University	N.Y.
Townsend, Woodrow Edgar A.B. in Govt. 1948, The George Washington University	Md	Trittman, Teresa Galloway A.B. 1944; A.M. 1947, The George Washington University	D.C.
Townsend, Alex Harold A.B. in Govt. 1957, The George Washington University	Va	Trittman, William Jennings A.B. 1947, The George Washington University	Va
Townsend, William Prescott B.S. in Ed. 1952, University of Scranton	D.C.	Trivette, Anne Ellen Trivette, Anthony Robert Trivette, Frank Joseph A.B. 1961, University of Maryland	Md
Tracy, George Donald A.B. 1947, Bowdoin University	Va	Trish, Edward George Trish, Vincent C. A.B. 1957, Providence College	Va
Tracy, James Norman A.B. 1952, University of Maryland	Md	Trojan, George Vernon B.S. 1957, Georgetown University	Va
Tracy, Margery Nelson A.B. 1941, Maryland College of the Sacred Heart	Va	Trounstein, Dennis B. Trotter, Frank Edward, Jr. Trotter, Harold Rue Trotter, James Weston Trotter, Marjorie E. A.B. 1946, Iowa State Teachers College	D.C.
Tracy, Nancy Rogers Treadway, Stephen Peter Treadway, Dominick Robert B.S. 1949, University of Maryland B.M.E. 1958, The George Washington University	Va	Trovalda, Gordon James B.S. in E.S. 1957, Georgetown University	Md
Treadway, David Lynn Treadway, Lin A. Diploma of License in Law 1951, University of Paris, France	Md	Trovalda, Norman A.B. 1947, Bernard College A.M. 1950, Columbia University	Va
Tran, Gloria Jean Tran, Louis Trank, David Kenneth Trank, Lyle Charles Trank, William Wynn Trantier, Rhonda Sue B.S. 1966, University of Maryland	D.C.	Trout, John A.B. 1947, University of Michigan	D.C.
Trenn, Charles Lynn B.S. in Ed. 1944, Radford College	D.C.	Trout, Thomas Welle Troutman, Bruce Norton A.B. 1949, Boston University	D.C.
Trevino, Robert Edward B.S. 1944, Maryland State Teachers College, Salisbury	Va	Trounstein, Benjamin Abram Troughman, Gordon Ben Samuel Troughman, Abraham Herman A.B. 1949, A.M. 1954, Oberlin College	Md
Traversone, George Joseph Travsky, Paul David Traylor, Nolan Randolph Treadway, James Edward, Jr. Trent, Annabelle Chalmers Trent, James Ronald A.B. 1949, Colgate University	Md	Trounstein, Thomas Fred Trotter, Thomas Hubert Trotter, William Harrison Trotter, Thomas Lewis B.S. 1956, Clemson Agricultural College	Md
Triebe, Harry Paul Trombly, Mr. Pauline A.B. 1944, Stephen's State College of Maryland	D.C.	Trounstein, Charles Freeman Troughman, Gordon Ben Samuel Troughman, Abraham Herman A.B. 1949, A.M. 1954, Oberlin College	Pa
Triman, Kenneth Dale B.S. in Ch.E. 1956, Purdue University	Pa	Trounstein, Thomas Fred Trotter, Thomas Hubert Trotter, William Harrison Trotter, Thomas Lewis B.S. 1956, Clemson Agricultural College	Pa
Trombly, Howard Frank, Jr. B.S. 1956, Georgetown University	Va	Trounstein, Charles Freeman Troughman, Gordon Ben Samuel Troughman, Abraham Herman A.B. 1949, A.M. 1954, Oberlin College	Pa
Trombly, Mary Catherine Trotter, Edward Coleman, Jr. B.S. in M.E. 1951, Virginia Polytechnic Institute	Va	Trounstein, Thomas Fred Trotter, Thomas Hubert Trotter, William Harrison Trotter, Thomas Lewis B.S. 1956, Clemson Agricultural College	Va
Trombly, Paul Edward Trombly, William Milton Trombly, Herbert Joseph Trombly, James Milton Trombly, John B.S. 1963, University of Maryland	Md	Trounstein, Thomas Fred Trotter, Thomas Hubert Trotter, William Harrison Trotter, Thomas Lewis B.S. 1956, Clemson Agricultural College	Md
	Va	Trounstein, Charles Freeman Troughman, Gordon Ben Samuel Troughman, Abraham Herman A.B. 1949, A.M. 1954, Oberlin College	Va
	D.C.	Trounstein, Thomas Fred Trotter, Thomas Hubert Trotter, William Harrison Trotter, Thomas Lewis B.S. 1956, Clemson Agricultural College	D.C.
	Pa	Trounstein, Charles Freeman Troughman, Gordon Ben Samuel Troughman, Abraham Herman A.B. 1949, A.M. 1954, Oberlin College	Pa
	Md	Trounstein, Thomas Fred Trotter, Thomas Hubert Trotter, William Harrison Trotter, Thomas Lewis B.S. 1956, Clemson Agricultural College	Md

Students Registered

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Van, Noyen Van		Tutney, Jack Rush	Md
Van, Noyen Van	Va	A.B. 1907, Western Maryland College	
Van, Noyen Van		Tyler, Howard Johnson	Conn
Van, Noyen Van	Va	B.S. 1912, U. S. Naval Academy	
Van, Noyen Van		Tustina, John Joseph	Va
Van, Noyen Van	Md	B.S. in P.E. 1911, College of the	
Van, Noyen Van	D.C.	City of New York	
Van, Noyen Van	N.Y.	Tux, James Ralph	Va
Van, Noyen Van	D.C.	Turman, William Leoline	Md
Van, Noyen Van		B.S. 1908, Morgan State College	
Van, Noyen Van	Md	Tustin, Gordon	D.C.
Van, Noyen Van		Tustin, Nancy Grace	Ill
Van, Noyen Van	D.C.	Tupperman, Clarence Howard	Va
Van, Noyen Van	D.C.	Tussock, LeRoy L.	Ind
Van, Noyen Van	W.Va	B.S. in Forestry 1911, University of	
Van, Noyen Van	D.C.	Idaho	
Van, Noyen Van	Md	Tyburn, Peter A.	Md
Van, Noyen Van	Md	A.B. 1907, University of Oregon	
Van, Noyen Van		Tyler, Clarence James	D.C.
Van, Noyen Van		Tyler, Mary Rose	Va
Van, Noyen Van		Tyler, F. J. Lee	Va
Van, Noyen Van		Tyler, John Norman	Del
Van, Noyen Van		A.B. 1907, Sacramento State College	
Van, Noyen Van		Tyler, Gordon E. Smith	D.C.
Van, Noyen Van		B.S. 1911, A.M. 1917, University	
Van, Noyen Van		of Chicago	
Van, Noyen Van		Tyler, Timothy Phillip	Md
Van, Noyen Van		Tyler, Russell Thomas	Va
Van, Noyen Van		Tyler, Norman Howard	D.C.
Van, Noyen Van		A.B. 1907, The George Washington	
Van, Noyen Van		University	
Van, Noyen Van		Tyng, Joseph	Va
Van, Noyen Van		B.S. in Pharmacy 1911, Villanova	
Van, Noyen Van		University	
U			
Udell, George		Udell, Nedra	Turkey
Udell, George		Udell, Gordon Fay	Va
Udell, George		Udell, Anne	D.C.
Udell, George		Udell, John, Gray	D.C.
Udell, George		Udell, Arthur Richard	D.C.
Udell, George		Udell, John Philip	Va
Udell, George		Udell, Norman Fred	Md
Udell, George		B.S. 1907, Rutgers College	
Udell, George		Udell, John, Elmer	Va
Udell, George		B.S. in M.E. 1917, University of	
Udell, George		Michigan	
Udell, George		Udell, Thomas Abel	Md
Udell, George		B.S. 1914, New York State College	
Udell, George		of Teachers, Buffalo	
Udell, George		Udell, John, Nelson	Va
Udell, George		B.S. 1911, U. S. Military Academy	
Udell, George		M.S. 1917, University of Wisconsin	
Udell, George		Udell, James M. Lusk	Ind
Udell, George		Udell, Walter Leslie	Md
Udell, George		Udell, Jack Lee	Va
Udell, George		A.B. 1907, University of Chicago	
Udell, George		A.M. 1911, Cornell University	
Udell, George		Udell, Oliver Thomas	Va
Udell, George		B.M.E. 1917, The George Washington	
Udell, George		University	
Udell, George		Udell, Robert Fort	Md
Udell, George		B.S. 1914, Rutgers College	
Udell, George		B.S. 1911, U. S. Naval Academy	
Udell, George		Udell, John, Keaton Marjorie	Md
Udell, George		Udell, William Scott	Turkey
Udell, George		Udell, Douglas William	D.C.
Udell, George		B.E. 1918, Yale University	
Udell, George		Udell, Harold Elmer	Va
Udell, George		Udell, Norman Gray	Va
Udell, George		A.B. 1914, University of Arizona	
Udell, George		Udell, Robert Leemann	D.C.

Students Registered

703

[illegible]

[illegible]

Watson, William Stuart	Del.	Wear, Patricia Kay
A.B. 1935, Lehigh College		Weary, Richard Dale
Waters, Leonard	D.C.	Weatherell, John Craig
Waters, Thomas Marie	W.Va.	Weatherly, Mary Modena
Waters, Martin Edwin	Md.	Weaver, Calvin George
B.S. in Ed. 1941, Pennsylvania State		Weaver, Charles Thomas
Teachers College, Kutztown		Weaver, David Laurence
M.S. in Ed. 1947, Bucknell University		Weaver, David Richard
Wash, Barbara Jean	Va.	Weaver, Loretta Richard
Wash, Charles Edward	Va.	B.S. 1955, Elizabethtown College
A.B. 1935, University of Virginia		Weaver, Maxine Kaye
Washington, Carl Allen	Pa.	Webb, Thomas Kent
Washington, Martha May	Pa.	Webb, Thomas Yates
Washington, Perry Joseph	Pa.	Webb, Laurence Vesta
Watt, Mary Rennie	Va.	B.S. in Ed. 1950, Arkansas State
Wattsman, Donald Edward	Md.	Teachers College
Wattsman, Donald Stanley	D.C.	Webb, Harold
B.S. 1942, Temple University		B.S. 1952, University of Alabama
M.B.A. 1946, University of Pennsylvania		Webb, James David
Watersbury, James Johnson	Conn.	B.S. 1951, Pace University
B.S. in Ed. 1947, Stanford University		Webb, Kenneth William
Watersman, James Marston	D.C.	A.B. in Const. 1946, The George
Waters, Hal Preston	Va.	Washington University
B.A.L.L. 1955, Catholic University of		Webb, William Lawrence
America		Webb, William Nelson
Waters, John Warren	Md.	Webb, Robert Louis
A.B. 1945, Michigan State College		Webster, James Henry
Waters, Mary Louise	Md.	Webster, William Henry
A.B. 1950, New York University		Webster, Graham Morris
Waters, Mary Jean	Conn.	Webster, Evelyn Lee
Waters, Robert Louis	N.Y.	Weeks, Christopher
A.B. 1954, Ohio Wesleyan University		B.S. 1953, Yale University
Waters, Robert Albert	Va.	A.M. 1957, University of Michigan
A.B. 1942, University of Maryland		Weeks, Conn Emma
Watkins, Howard Lancaster	D.C.	A.B. 1957, Miami University
Watkins, John Allen	Va.	Weeks, Robin Wendell
Watkins, Laura Augusta	Conn.	Weeks, M. Jane
A.B. 1954, Western College		A.B. 1954, University of Vermont
Wetzel, Leta Gale	D.C.	Welch, Harold E.
A.P. 1951, Johnson C. Smith University		A.B. 1955, University of New
Wetzel, William Robert	D.C.	Mexico
Wetzel, John Lawrence	Va.	Wentworth, Henry
Wetzel, Allen Bruce	D.C.	Retired at 1953, University of Bonn
Wetzel, James Lewis	D.C.	Germany
Wetzel, Dorothy A. Carter	Va.	Went, Richard Paul
Wetzel, Dorothy Master	Va.	Went, Richard George, Jr.
Wetzel, Ernest John	Conn.	A.B. 1950, Middlebury College
Wetzel, Harold Kirk		Went, Gloria Eleanor
B.S. 1950, Bates College		A.B. 1953, University of Wisconsin
Wetzel, James Douglas	Md.	Went, Rosemary
Wetzel, Robert Michael Carter	Md.	Wentworth, Robert George
A.B. 1950, A.M. 1952, I.C.T.C. 1955,		B.S. 1957, Columbia University
University of Michigan		Wentworth, William David
Wetzel, Sidney	D.C.	Wentworth, Louis Lee
Wetzel, Virginia Jean	W.Va.	A.B. 1957, The George Washington
B.S. 1945, Ed. Teachers College		University
Wetzel, William Edward		Wentworth, Emma
A.B. 1945, West Virginia Wesleyan		Wentworth, Murray Aaron
College		B.S. 1943, M.D. 1945, Johns Hopkins
Wetzel, Emma Ann	D.C.	Wentworth, Camille
Wetzel, James Vernon	N.Y.	Wentworth, Joseph Murray
A.B. 1954, Princeton University		Wentworth, Kenneth Bruce
Wetzel, James Gordon	Conn.	Wentworth, Stanley
B.S. in Ed. 1954, Case Institute		B.S. 1947, College of the City of
Technology		New York
Wetzel, Susan W.	D.C.	M.S. 1950, New York University
B.S. 1944, D.C. Teachers College		Wentworth, Virginia
Wetzel, Charles Louis	Maine	Wentworth, Donald Hugh
A.P. in Ed. 1950, A.M. in Ed. 1952,		Wentworth, Henry
The Johns Hopkins University		A.B. 1944, College of the City of
Wey, Virginia Yvonne	Md.	New York
Weyburn, Philip Alexander	Md.	A.M. 1945, Columbia University
A.B. 1955, Maryland State Teachers		
College, Bowie		

707

[illegible]

Wessendorf, Walter Frederick, Jr.	N Y	Whinnant, Wythe Hollister, Jr.	N Y
LL.B. 1957, Union University		A.B. 1956, Louisiana University	
Westler, Ira Fly	N Y	Whitaker, Homer E.	N Y
A.B. 1956, St. Lawrence University		Ph.D. 1974, Boston University	
West, Barbara Stewart	D.C.	Whitaker, Harry Holbrook	N Y
West, Charles Henry	Wis	Whore, Alphon Phares, Jr.	N Y
B.S. in M.E. 1926, University of Wisconsin		B.S. in C.E. 1948, University of Arizona	
West, Donald Christian	MI	White, Alvin Earl	N Y
West, Edward D. Boone	D.C.	B.F.A. 1949, University of California	
West, James Ferguson	Calif.	White, Ann Carolyn	N Y
B.S. 1971, University of Maryland		A.B. 1938, Colgate College	
West, Phyllis Gunning	D.C.	White, Carolyn	N Y
West, Robert Edgar, Jr.	Va	White, Charles Lee	D.C.
West, Robert Harvey	D.C.	B.S. 1961, Southeast Missouri State College	
West, Thomas Reed	D.C.	White, Glen Herbert	N Y
A.B. 1948, Princeton University		A.B. 1947, Princeton University	
Westling, Roscoe Mack	MI	A.M. 1951, Harvard University	
Weston, Thomas Franklin	MI	White, James Franklin	N Y
Westra, Helen I.	MI	A.B. 1954, Dickinson College	
A.B. 1944, Western College		White, David Maynard	N Y
Westwaterman, James A.	Va	White, David Neal	N Y
B.S. 1967, Col. Ind. College		White, David Edward	N Y
Wetson, Gerald M.	N Y	White, C. H. 1958, The Citadel	
Wetzel, Albert Stanley	Va	B.S. 1958, University of Maine	
B.S. in C.E. 1950, University of Wisconsin		White, Eugene Robert	N Y
Weyman, John William	Va	B.S. 1951, University of Maine	
Whalen, Rita	D.C.	White, Frances Russell	N Y
Whaley, Mary Carolyn	Texas	White, Ida Lee	N Y
Whalen, Harold De Bussy	Va	A.B. 1957, Georgetown College	
B.S. 1957, University of Maryland		White, James Bruce	N Y
Wharton, David Bailey	Va	B.S. 1951, Alabama State College	
LL.B. 1974, Washington and Lee University		A.M. 1951, Columbia University	
Wharton, Helen Elizabeth	Del	White, James John	N Y
B.S. 1974, Delaware State College		White, James Patrick	N Y
Whitaker, Charles Henry III	Md	A.B. 1974, D.D. 1966, State University of Iowa	
A.B. 1961, Western Maryland College		White, John Alton	N Y
Whitaker, Robert Lyle	D.C.	White, John Clarence	N Y
Whitaker, Calvin Victor	Md	White, John Lee	N Y
B.S. in M.E. 1974, Case Institute of Technology		White, John Austin	N Y
Whitely, Eric June	D.C.	White, John George	N Y
A.B. 1957, Western Maryland College		White, Leonard Allen	N Y
Whitely, Elizabeth Dumas	Md	White, Lester Saker	N Y
B.F.A. 1961, Western Reserve University		B.S. 1951, North Carolina State Teachers College, Lenoir City	
Whitely, Henry Lee	D.C.	White, Peter Russell	N Y
Whitely, John Lee	D.C.	White, Richard Warren	N Y
Whitely, John Eugene	Va	A.B. 1957, Brown University	
Whitely, James Mack	Mass	White, Robert Dyer	N Y
Whitely, Lora Moore	Ga	White, Rosemary Leslie	N Y
B.F.A. 1971, University of Georgia		A.B. 1977, Marquette College	
Whitely, William Ellis	Va	White, Teddy Nye	N Y
Whitely, Carl Reed	D.C.	A.B. 1954, University of Washington	
Whitely, Judith God	Md	A.B. 1954, University of Washington	
Whitely, John Paul	Va	White, Thomas N. I.	N Y
Whitely, John Paul	Pa	White, Wayne Gus	N Y
Whitely, John Paul	D.C.	A.B. 1974, Belmont Young University	
Whitely, M. Louise	Va	White, Eugene Raymond, Jr.	N Y
Whitely, William Hanna, Jr.	Va	White, Ann Carolyn	N Y
Whitely, Carl Stanley	Ark	White, James Samuel	N Y
B.S. in S.W. 1967, A.M. 1968, University of Arkansas		Whitely, Joseph E.	N Y
Whitely, Bruce Paul	Va	Whitely, Joseph E.	N Y
Whitely, Bruce Paul, Jr.	D.C.	Whitely, Joseph E.	N Y
B.S. 1974, Western College		Whitely, William D. Cowan	N Y
Whitely, Gary James	La	Whitely, James D. Cowan	N Y
Whitely, Stephen Knight	Calif.	B.S. 1961, U.S. Naval Academy	
B.S. 1977, M.S. 1978, Stanford University		Whitely, Charles Leland	N Y
Whitely, Fred Smith, Jr.	N C	Whitely, Douglas Cole	N Y
B.D. 1974, North Carolina State College		Whitely, Edward Cole	N Y
		A.B. 1958, Stanford University	

[illegible]

[illegible]

Students Registered

711

[illegible]

713

[illegible]

[illegible]

SUMMARY OF REGISTRATION

1958-59

JUNIOR COLLEGE

	Men	Women	Total
Freshmen	488	440	928
Sophomores	431	501	932
Total	1,019	941	1,960

COLUMBIAN COLLEGE

			Total
Juniors	124	159	283
Seniors	244	234	478
Master of Arts candidates	211	142	353
Master of Science candidates	120	9	129
Unclassified	11	57	68
Total	710	591	1,301

THE GRADUATE COUNCIL

Doctor of Philosophy candidates	128	18	146
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THE SCHOOL OF MEDICINE

First Year	93	8	101
Second Year	91	6	97
Third Year	92	10	102
Fourth Year	88	3	91
Total	364	27	391

THE LAW SCHOOL

First Year	467	21	488
Second Year	464	28	492
Third Year	456	15	471
Master of Laws candidates	42	2	44
Master of Comparative Law candidates	8	2	10
Master of Comparative Law (American Practice) candidates	4	—	4
Doctor of Jurisprudence candidates	5	1	6
Unclassified	24	—	24
Total	1,250	69	1,319

(716)

THE SCHOOL OF ENGINEERING

	Men	Women	Total
Engineers	211	7	218
Surveyors	18	2	20
Miners	197	1	198
Master of Science in Engineering candidates	148	1	149
Master of Engineering Administration candidates	141	—	141
Unclassified	421	1	422
Total	15	—	15
	1,319	12	1,331

THE SCHOOL OF PHARMACY

	Men	Women	Total
Pharmacists	18	2	20
Pharmaceutical Chemists	14	—	14
Unclassified	1	—	1
Total	33	2	35

THE SCHOOL OF EDUCATION

	Men	Women	Total
Teachers	19	81	97
Master of Arts candidates	49	114	163
Advanced Professional Certificate candidates	213	255	468
Master of Education candidates	49	49	98
Unclassified	20	25	45
Total	70	113	183
	417	607	1,024

THE SCHOOL OF GOVERNMENT

	Men	Women	Total
Government	81	21	102
Master of Arts in Government candidates	186	48	234
Master of Arts in Personnel Administration candidates	202	39	241
Master of Arts in Public Administration candidates	14	3	17
Master of Business Administration candidates	22	1	23
Master of Social Administration candidates	137	5	142
Unclassified	17	1	18
Total	13	4	17
	672	112	784

THE COLLEGE OF GENERAL STUDIES

	Men	Women	Total
General Studies	25	1	26
Master of Arts candidates	71	5	76
Master of Science in Cartography candidates	1	—	1
Unclassified	32	5	37
Total	1	—	1
	130	9	139

THE DIVISION OF UNIVERSITY STUDENTS

	Men	Women
University students	2,248	1,082

THE DIVISION OF SPECIAL STUDENTS

Special students	624	171

SUMMARY

Students Registered, Academic Year 1958-59 ..	13,415	5,865
Students Registered, Summer Session 1958 ..	2,529	1,278
Total Registration 1958-59 ..	15,944	7,143
Duplicate Registrations ..	8,821	4,410
Total Number of Students Registered 1958-59*	7,123	2,673

* The above number does not include

The College of General Studies (Off Campus)

Credit courses

Noncredit courses

Interim, noncredit courses

Total

TEACHING STAFF 1958-59

Professors Emeritus ..	
Professors ..	
Research Professors ..	
Adjunct Professors ..	
Professorial Lecturers ..	
Clinical Professors ..	
Associate Professors ..	
Associate Clinical Professors ..	
Associate Professorial Lecturers ..	
Associate in the School of Medicine ..	
Assistant Professors ..	
Assistant Clinical Professors ..	
Assistant Research Professors ..	
Lecturers ..	
Instructors ..	
Control Instructors ..	
Assistant ..	
Fellow ..	
Graduate Teaching Assistants ..	
Technicians ..	

TOTAL

DEGREES CONFERRED

1958-59

Arts (College of General Studies)	58
Arts (Junior College)	419
Arts (College of General Studies)	1
Arts (Columbia College)	51
Arts in Education	220
Arts in Government	62
Civil Engineering	122
Electrical Engineering	4
Law	47
Mechanical Engineering	147
Science	17
Science in Engineering	45
Science in Home Economics	11
Science in Pharmacy	6
Science in Physical Education	14
Business Administration	16
Education	2
Medical Science	5
Pharmacy	1
Public Health	61
Arts (College of General Studies)	15
Arts (Columbia College)	45
Arts in Education	43
Arts in Government	47
Arts in Physical Education	87
Arts in Public Administration	22
Business Administration	1
Comparative Law	7
Comparative Law (American Practice)	67
International Administration	1
Science	3
Science in Engineering	47
	20
	25
	6

1,799

GEOGRAPHICAL DISTRIBUTION OF STUDENTS
UNITED STATES, TERRITORIES, AND POSSESSIONS

Alabama	43	Georgia	55
Arizona	3	Idaho	57
Arkansas	22	Illinois	134
California	27	Indiana	66
Colorado	171	Iowa	45
Connecticut	25	Kansas	13
Delaware	76	Kentucky	30
District of Columbia	24	Louisiana	22
Florida	574	Maine	47
Illinois	142	Maryland	214

Massachusetts	151	Pennsylvania
Michigan	92	Rhode Island
Minnesota	60	South Carolina
Mississippi	24	South Dakota
Missouri	54	Tennessee
Montana	7	Texas
Nebraska	37	Utah
Nevada	15	Vermont
New Hampshire	20	Virginia
New Jersey	218	Washington
New Mexico	19	West Virginia
New York	452	Wisconsin
North Carolina	100	Wyoming
North Dakota	19	Canal Zone
Ohio	147	Hawaii
Oklahoma	44	Guam
Oregon	23	Puerto Rico

FOREIGN COUNTRIES

Afghanistan	5	Israel
Argentina	1	Italy
Australia	1	Japan
Bahamas	6	Jordan
Bolivia	9	Korea
Brazil	9	Latvia
British Guiana	1	Lebanon
Bulgaria	1	Liberia
Burma	4	Libya
Canada	7	Mexico
Chile	1	Morocco
China	11	Netherlands
Colombia	2	Netherlands West Indies
Cuba	7	Nicaragua
Cyprus	1	Norway
Ecuador	6	Pakistan
Egypt	2	Panama
England	1	Paraguay
Ethiopia	1	Peru
Finland	3	Philippines
France	5	Poland
French West Africa	1	Southland
Germany	3	Spain
Ghana	1	Sweden
Greece	1	Switzerland
Guatemala	5	Thailand
Haiti	1	Turkey
Honduras	6	Uruguay
Hungary	1	Venezuela
India	15	Vietnam
Indonesia	11	Yemen
Iran	19	Yugoslavia
Iraq	6	

ALUMNI AND AFFILIATED ASSOCIATIONS

THE GENERAL ALUMNI ASSOCIATION

The objects of this Association are to unite the graduates in closer sympathy and to promote the general welfare of the University. The following persons are eligible for *active* membership: graduates of any college, school, or division of the University; holders of honorary degrees from the University; and members of the Board of Trustees and of the Faculty of the University. Any person who has matriculated, who has been in regular attendance for one year, and who has left the University in good standing, is eligible for *associate* membership.

The University, in June 1958, provided new quarters for the Office of Alumni Relations in Bacon Hall, 2000 H Street NW., Washington 6, D. C. The General Alumni Association completed furnishing a reception room in November 1958 dedicated to the use of alumni and alumni organizations.

All Alumni are urged to keep the office informed of changes of address and to supply information with regard to their fellow alumni.

1959-60

GOVERNING BOARD

President.—James C. Van Story, Jr., A.B. 1948, A.M. 1949; 1145 19th Street NW., Washington, D. C.

Presidents:
Columbian College.—Washington I. Cleveland, LL.B. 1923, A.B. 1920; "Piney Thicket", R.F.D. 1, Rockville, Md.

Graduate Council.—Estelle S. Phillips, A.B. 1923, A.M. 1927, Ph.D. 1936; 3806 Everett Street, Kensington, Md.

School of Medicine.—Donald Harper Leeper, Jr., M.D. 1938 (B.S. 1932, Davidson College); 1835 I Street NW., Washington, D. C.

Law School.—L. Jackson Embrey, A.B. 1937, LL.B. 1949, LL.M. 1949; 647 22d Street South, Arlington, Va.

School of Engineering.—Herbert Harry Rosen, B.S. in Eng. 1954, 2725 Macomb Street NW., Washington, D. C.

School of Pharmacy.—Gunter K. Kessler, B.S. in Phar. 1953; 2607 8th Street South, Arlington, Va.

School of Education.—Elsie E. Green, A.B. 1914, A.M. 1928, 3151 Tennyson Street NW., Washington, D. C.

- School of Government.*—Roy B. Eastin, A.B. 1942, A.M. 1945 (Ph.D. 1953, American University); Government Printing Office, Washington, D. C.
- Treasurer.*—James F. Perrin, LL.B. 1950; 3027 Chestnut Street NW, Washington, D. C.
- Executive Secretary.*—Mary Dow, A.B. 1953; 204 Green Street, Alexandria, Va.

THE GEORGE WASHINGTON UNIVERSITY MEDICAL SOCIETY

The George Washington University Medical Society, the organization of graduates of the School of Medicine, was established in 1905 and since 1926 has been affiliated with the General Alumni Association. The objects of the Society, as stated in the constitution, are "The promotion of the science and art of medicine and the welfare of the School of Medicine."

1958-59

- President.*—Helen Gladys Kain, B.S. 1917, M.D. 1923; 1801 I Street NW., Washington, D. C.
- President Elect.*—Frederick Young Donn, M.D. 1941; 1835 I Street NW., Washington, D. C.
- First Vice President.*—Edward Egner Ferguson, M.D. 1930; 1835 I Street NW., Washington, D. C.
- Second Vice President.*—Glen Pincock, M.D. 1934; 3604 Cardiff Road Chevy Chase, Md.
- Secretary.*—Marcus P. Goumas, A.B. 1938, M.D. 1942; 1106 W. Great Falls Street, Falls Church, Va.
- Treasurer.*—Naomi Marilyn Kanof, A.B. 1931, M.D. 1934; 1150 Connecticut Avenue NW., Washington, D. C.
- Council:*
 Robert Rice Montgomery, M.D. 1943 (A.B. 1945, Lafayette College); 8314 Carey Lane, Silver Spring, Md.
 Richard Fischer, B.S. 1939, M.D. 1943; 5120 Scarsdale Road NW, Washington, D. C.
 Alfred Brigulio, M.D. 1936; 1929 Upshur Street NW., Washington, D. C.
 Donald Harper Leeper, Jr., M.D. 1938 (B.S. 1932, Davidson College); 1835 I Street NW., Washington, D. C.
 Roscoe Creer, M.D. 1935; 5205 Dorset Avenue NW., Washington, D. C.

THE GEORGE WASHINGTON LAW ASSOCIATION

The George Washington Law Association, the organization of graduates of the Law School, was founded in 1912 and has been affiliated with the General Alumni Association since 1926. Its purposes as stated in the

stitution are to promote high standards of legal education, to keep the members of the Law School in closer touch with one another and especially with members of their own classes, to gather and publish at intervals information as to the whereabouts and activities of these alumni, and to further the interests of the Law School.

1957-58

- President*.—Bernard I. Nordlinger, A.B. 1929, LL.B. 1933; 3539 Chesapeake Street NW., Washington, D. C.
- First Vice President*.—Fontaine Cosby Bradley, LL.B. 1925; 1820 45th Street NW., Washington, D. C.
- Second Vice President*.—Sam Houston, LL.B. 1937 (National University); 725 13th Street NW., Washington, D. C.
- Third Vice President*.—Philbrick McCoy, LL.B. 1922, LL.M. 1923; The Superior Court, Los Angeles, Calif.
- Secretary*.—Nad A. Peterson, A.B. 1950, J.D. 1953; 3535 Valley Drive, Alexandria, Va.
- Treasurer*.—Samuel J. L'Hommiedieu, Jr., LL.B. 1922; 2739 McKinley Street NW., Washington, D. C.
- Executive Committee*:
- Arthur Clephane, LL.B. 1936 (National University); 1335 Land Title Bldg., Philadelphia, Pa.
- Norman Christenson, LL.B. 1931 (National University); 32 W. Center Street, Provo City, Utah
- James Russell Cutler, J.D. 1949 (B.S. 1945, California Institute of Technology); 9304 Kingsley Avenue, Bethesda, Md.
- Frank Strahan Freret, LL.B. 1950 (A.B. 1942, Tulane University in Louisiana); 1162 W. Wakefield Drive, Alexandria, Va.
- James Stocks Hope, A.B. 1950, J.D. 1951 (B.S. 1950, U. S. Merchant Marine Academy); 15 Vernon Terrace, Alexandria, Va.
- D. Hughes, LL.B. 1934 (B.S. 1930, Alabama Polytechnic Institute, LL.M. 1935, Georgetown University); 1331 Bennington Avenue, Pittsburgh, Pa.
- John Logan, A.B. 1925, LL.B. 1926; Barley Mill Road, Greenville, S. C.
- E. Monk, A.B. 1928, LL.B. 1930, LL.M. 1934; 4020 Franklin Street, Kensington, Md.
- Horton Mosteller, LL.B. 1924 (National University); 733 15th Street NW., Washington, D. C.
- Starkley Nail, LL.B. 1951; 6653 Howe Place, Springfield, Va.
- J. Stout, LL.B. 1938 (A.B. 1933, University of Utah); 7304 Western Avenue, Chevy Chase, Md.

Richard W. Turner, LL.B. 1928 (National University); 514 Lull
Lane, Route 5, Vienna, Va.

James F. Perrin, LL.B. 1937 (National University); 3027 Chem
Street NW., Washington, D. C.

THE LIBRARY SCIENCE ALUMNI ASSOCIATION

The Library Science Alumni Association was organized in 1932 by graduates of the Division of Library Science and became an affiliate of the General Alumni Association in 1945. It was established to foster closer relationship between the Faculty and graduates and to further the interests of the Division of Library Science and of the University as a whole.

1958-59

President.—Clara Widger, ex 1929; 2115 F Street NW., Washington D. C.

Vice President.—Mary Kelso, A.B. in L.S. 1940; 402 Oakwood Street SE., Washington, D. C.

Secretary.—Anna Moore Link, A.B. in L.S. 1933; 2530 Q Street NW., Washington, D. C.

Treasurer.—Virginia Whitney, A.B. in L.S. 1930; 3338 Military Road NW., Washington, D. C.

THE ENGINEER ALUMNI ASSOCIATION OF THE GEORGE WASHINGTON UNIVERSITY

The Engineer Alumni Association was organized in 1936 and has been affiliated with the General Alumni Association since that time. Its objects are to unite the graduates and Faculty of the School of Engineering in closer fellowship, to promote the general welfare of the School of Engineering and of the University at large, to foster activities of the engineering organizations recognized by the University, and to advance the profession of engineering in general.

1959-60

President.—Herbert Harry Rosen, B.S. in Eng. 1954; 3725 Macomb Street NW., Washington, D. C.

Vice President.—James J. Crenca, B.E.E. 1955; 3150 Buena Vista Terrace SE., Washington, D.C.

Secretary.—Anthony Thomas Lane, B.E.E. 1957; 1511 16th Road North Arlington, Va.

Treasurer.—Paul Kuzio, B.C.E. 1955; 3601 Van Ness Street NW., Washington, D. C.

Executive Committee:

- Frank Taylor Mitchell, Jr., B.E.E. 1940; 5520 Uppingham Street, Chevy Chase, Md.
 Warren C. Crump, B.C.E. 1940; 4837 16th Street NE., Washington, D. C.
 Alfred Brox Moe, A.B. 1949, B.C.E. 1953; 130 S. Columbus Street, Arlington, Va.
 Benjamin C. Cruickshanks, B.S. in M.E. 1920; 5733 4th Street NW., Washington, D. C.
 James M. Brearly, B.S. in M.E. 1931, LL.B. 1936; 1452 Juniper Street NW., Washington, D. C.
 Leon Tepper, B.S. 1941; 3018 Cambridge Street NW., Washington, D. C.
 George Tittrington, B.C.E. 1950; 4111 Rosemary Place, Chevy Chase, Md.

THE GEORGE WASHINGTON UNIVERSITY NURSES ASSOCIATION

The George Washington University Nurses Association was organized in 1914. In 1936 this organization was made an integral part of the General Alumni Association, and graduates of the School of Nursing were given associate membership. The objects of the Association are to hold sessions for the graduates of the George Washington University Hospital School for Nurses, to care for its sick members and to promote the advancement of nursing in the interest of the George Washington University Hospital.

1957-58

- President.*—Claudine Clark Thomas, N. Cert. 1927; 1714 N. Adams Street, Arlington, Va.
Vice President.—Ruby Garthright Gottwals, N. Cert. 1914; 2129 19th Street N., Arlington, Va.
Secretary.—Ruth Poindexter, N. Dip. 1924; 1815 17th Street NW., Washington, D. C.
Treasurer.—Alma W. Stevens, N. Dip. 1928; 4106 Madison Street, Hyattsville, Md.

THE PHARMACY ALUMNI ASSOCIATION

The Pharmacy Alumni Association was organized in 1955 and is affiliated with the General Alumni Association. Its objects are to unite the graduates and Faculty of the School of Pharmacy in closer fellowship, to promote the general welfare of the School of Pharmacy and of the University at large, to foster activities of the pharmacy organizations recog-

nized by the University, and to advance the profession of pharmacy in general.

1958-59

President.—F. Royce Franzoni, B.S. in Phar. 1936; 3508 N. Abingdon Street, Arlington, Va.

Vice President.—Morris Gersel Goldstein, Phar.D. 1915; 2704 Woodley Place NW., Washington, D. C.

Secretary-Treasurer.—Albert Morris DuGoff, B.S. in Phar. 1951; 8806 Tahona Drive, Silver Spring, Md.

REGIONAL ALUMNI CLUBS

Regional alumni clubs sponsored by the General Alumni Association are maintained in the following places: Los Angeles, Calif.; Miami, Fla.; Atlanta, Ga.; Chicago, Ill.; Baltimore, Md.; Boston, Mass.; Detroit, Mich.; Kansas City, Mo.; Brooklyn, N. Y.; New York City, N. Y.; Cleveland, Ohio; Tulsa, Okla.; Philadelphia, Pa.; Pittsburgh, Pa.; Dallas, Texas; Seattle, Wash.; Milwaukee, Wis.; Arkansas; Northern California; New Jersey; Ohio River Valley; Utah; Hawaii; Philippines; Islands; Puerto Rico.

Information about the officers and activities of these clubs may be obtained from the Alumni Office of the University.

THE GRADUATE ENDOWMENT FUND

The Graduate Endowment Fund was founded by the class of 1925 with the object of providing endowment to be used for the development of the University. Membership is limited to seniors and graduates who make a pledge of \$100, payable annually in ten equal installments.

The pledge notes and funds are held in trust. When the proceeds reach the sum of \$100,000, the Board of Administrators of the University may pay the University such sums as it may vote for the creation of buildings, acquisition of sites, maintenance, and purchase of equipment. At no time may money be drawn so as to leave a balance of less than \$50,000 on deposit.

On request, the Alumni Office of the University will furnish blanks to alumni.

THE COLUMBIAN WOMEN

The objects of this organization are (1) the promotion of scholarship among its members; (2) the advancement of women by the founding of scholarships in the various departments of the University; and (3) the promotion of the interests of the University.

MEMBERSHIP

The following persons shall be eligible for active membership: (a) any woman who is currently registered or has been previously registered as a student in The George Washington University; (b) any woman member of the Faculties or Board of Trustees, any woman on the administrative staff; the wife of any member of the Faculties, Board of Trustees, or the administrative staff; (c) any woman recipient of an honorary degree from the University.

1959-60

- President*.—Dora M. Ihle, A.B. 1935, A.M. 1936; 2475 Virginia Avenue NW., Washington, D. C.
First Vice President.—Margaret Davis, A.B. 1937, A.M. 1941; 1657 31st Street NW., Washington, D. C.
Second Vice President.—Margaret E. Moore, A.B. 1933; 1109 Cross Drive, Alexandria, Va.
Treasurer.—Winifred Cox, A.B. 1934; 2013 New Hampshire Avenue NW., Washington, D. C.
Assistant Treasurer.—Mary E. Stadtmueller, A.M. 1952; (A.B. 1925, Coe College); 1115 Geranium Street NW., Washington, D. C.
Corresponding Secretary.—Nan B. Word, A.B. 1958; 1303 South Barton Street, Arlington, Va.
Assistant Corresponding Secretary.—Ruth E. Nicolo, A.B. 1951; 6808 Berkshire Drive, Bethesda, Md.
Recording Secretary.—Mary M. Kochka, A.B. 1918, A.M. 1951; 5100 Lamar Road NW., Washington, D. C.
Historian.—Helen J. Stone, A.M. 1949, Ph.D. 1954; 1818 Jefferson Place NW., Washington, D. C.

THE WOMEN'S BOARD OF THE GEORGE WASHINGTON UNIVERSITY HOSPITAL

The object of this organization is to aid in every way the interests and advancement of the George Washington University Hospital. Meetings are held on the first Wednesday of each month, October to June, inclusive. Inquiries regarding membership should be addressed to the Corresponding Secretary, The George Washington University, Washington 6, D. C.

1959-60

- President*.—Mrs. John Parks
First Vice President.—Mrs. Barton W. Richwine
Second Vice President.—Mrs. Henry W. Herzog

Third Vice President.—Miss Grace Burton
Recording Secretary.—Mrs. Stanley L. Sommer
Corresponding Secretary.—Mrs. Hulbert T. Bisselle
Assistant Corresponding Secretary.—Mrs. Paul Calabrisi
Treasurer.—Mrs. Wolfram K. Legner
Assistant Treasurer.—Mrs. Paul W. Bowman
Members at Large:

Mrs. Walter A. Bloedorn
Mrs. Robert W. Bolwell
Mrs. Cloyd H. Marvin
Mrs. Joseph H. Roe

THE
GEORGE
WASHINGTON
UNIVERSITY

BULLETIN

VOL. LVIII

No. 9

THE COLLEGE OF
GENERAL STUDIES

WASHINGTON 6, D. C.

PUBLISHED IN AUGUST
MCMLIX

BY THE UNIVERSITY

1959

July						
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November						
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December			
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COLLEGE OF GENERAL STUDIES CALENDAR*

Date	Day	Occasion
1959 FALL SEMESTER: Sept. 1-11	Tuesday through Friday	Preadvising for all entering Junior College and School of Engineering students
Sept. 1-Oct. 30	Tuesday through Friday	Period for Off-Campus registration and beginning of classes
Sept. 11	Thursday	Orientation Assembly for all new On-Campus Students
Sept. 17 and 18	Thursday and Friday	Registration on Campus
Sept. 18	Friday	CGS Meeting of Staff of Instruction, Monroe 102, 8 p.m.
Sept. 21	Monday	Classes begin on Campus
Sept. 25 and 26	Friday and Saturday	Comprehensive examinations for Master of Arts candidates
Oct. 2	Friday	Last day on which candidates may file in the Office of the Registrar, thesis subjects for the Master's degrees to be conferred in February
Oct. 17	Saturday	Fall Convocation
Nov. 11	Wednesday	Veterans Day, Holiday
Nov. 26-28	Thursday through Saturday	Thanksgiving recess
Dec. 4 and 5	Friday and Saturday	Comprehensive examinations for Master of Arts candidates
Dec. 12	Saturday	Graduate Record Examination
Dec. 21-Jan. 2	Monday through Saturday	Christmas recess for On-Campus and Off-Campus students
Jan. 4	Monday	On-Campus classes resume
Jan. 4-Feb. 12	Monday through Friday	Last day for submitting to the Dean theses of February Master's candidates
Jan. 13	Wednesday	Period for Off-Campus registration and beginning of classes
Jan. 18-26	Monday through Tuesday	Last day of Campus classes for the fall semester
		On-Campus examination period

*Courses in the College of General Studies may be organized upon request at any time during the year.
Registration for a degree for Graduate Record Examinations, and for comprehensive examinations is the responsibility of the student and must be made at the time of registration for the classes required for the degree concerned.

COLLEGE OF GENERAL STUDIES CALENDAR—Continued

Date	Day	Occasion
SPRING SEMESTER		
Jan. 28 and 29	Thursday and Friday	Registration on Campus*
Jan. 30	Saturday	CGS Meeting of Staff of Introduction, Monroe 102, 10:30 a.m.
Feb. 1	Monday	Classes begin on campus
Feb. 12	Friday	Last day on which students may file, in the Office of Registrar, those of the Master's degrees to be conferred in June
Feb. 22	Monday	Winter Convocation
April 1 and 2	Friday and Saturday	Comprehensive examinations
April 9	Saturday	Master of Arts examinations
April 13	Wednesday	Graduate Record Examinations
April 15-20	Friday through Wednesday	Last day for submitting Dean theses of June Master's candidates
May 11	Wednesday	Easter recess for On-Campus students, and Off-Campus students in Education
May 12	Thursday	Last day of On-Campus classes for the spring semester
May 16-24	Monday through Tuesday	Information, Education, Training Officers' Conference, Club, 12:30 p.m.
May 20	Sunday	On-Campus examinations period
May 30	Monday	Re-graduate Session
June 1	Wednesday	Memorial Day, Holiday
June 1	Monday through Friday	Commencement
SUMMER SESSIONS		
*May 3-6 June 10	Friday	Registration for summer sessions in the Off-Campus Division
*June 13	Monday	Registration† On-Campus eight week term
June 14	Tuesday	Classes begin on Campus
July 4	Monday	Independence Day, Holiday
July 8 and 9	Friday and Saturday	Comprehensive examinations
Aug. 5	Friday	Master of Arts examinations
Sept. 22 and 23	Thursday and Friday	Last day for submitting Dean theses of October Master's candidates
		Summer Sessions end on Campus
		Last day for submitting Dean theses of October Master's candidates
		Registration on Campus for fall semester of the next year 1971-72

* Application for a degree, for Graduate Record Examinations, and for comprehensive examinations is the responsibility of the student and must be made at the time of registration. Last classes required for the degree concerned.

† Courses in the College of General Studies may be organized upon request at any time in the year.

OFFICERS OF ADMINISTRATION

Oswald Symister Colclough, B.S., LL.B., LL.D., *Dean of Faculties; Acting President of the University*
 Grover LaMarr Angel, A.M., Ed.D., *Dean of the College of General Studies*
 Walter Harold Hayes, Jr., A.M., *Assistant Dean of the College of General Studies*
 Robert Clinton Rutledge, A.M., *Director of the Off-Campus Division*

ADMINISTRATIVE STAFF

Robert Whittington Eller, A.M., *Assistant Director of the Off-Campus Division*
 Alexander Grant Rose III, A.M., *Assistant Director of the Off-Campus Division*
 John Arnold Timour, A.B., *Assistant Director of the Off-Campus Division*
 John Gordon Boswell, A.M., *Assistant Director of the Off-Campus Division*
 Jack Wood Charles, A.M., *Assistant Director of the Off-Campus Division*
 Jessie Edith Mullins, A.M., *Assistant to the Dean; Chief of the Registration Processing Section*
 William Fox Quigley, *Assistant to the Assistant Dean; Assistant Director of the Division of Community Services*
 Ray Eugenia Walters, *Secretary to the Dean*
 Sylvia Hilda Rambo, *Secretary to the Assistant Dean of the College of General Studies*
 Jamie Arnold Tacy, *Secretary to the Director and Assistant Directors of the Off-Campus Division*
 Elizabeth Pierce Clarkson, *Registration Processing Assistant*
 Hamilton Lee, *Receptionist*

SPECIAL PROGRAM DIRECTORS

Mary Ellen Coleman, A.M., *Director of the Reading Clinic*
 Laura Eurtado McCarty, A.M., *Assistant Director of the Reading Clinic*
 Zola Mills Huse, A.M., *Clinician in the Reading Clinic*
 Grace Louise Toon, *Secretary in the Office of the Director of the Reading Clinic*

COMMITTEES*

THE DEAN'S COUNCIL†

Benjamin Douglass Van Evera
Arlin Rex Johnson

Don Carlos Faith

Carl Hugo Walber
Blake Smith Root

COMMITTEE ON UNDERGRADUATE ADMISSION AND ADVANCED STANDING

The Dean of the College, *Chairman*

Lubin Poe Leggette
George Elbert McSpadden
Harland Walter Westermann

James Carlton Dockera
James Willard Harkness
Harold Griffith Sutton, *ex officio*

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The Dean of the College, *Chairman*

Ira Bowers Hansen
Arlin Rex Johnson
James Norman Mosel

Fred Salisbury Tupper
David Springer Brown
Harold Griffith Sutton, *ex officio*

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Florence Marie Mears
Robert Fenn Towson, Jr.

Harry Grubb Detwiler
Frederick Russell Houser, *ex officio*

COMMITTEE ON CURRICULUM AND PROGRAMS

Burnice Herman Jarman, *Chairman*

Benjamin Douglass Van Evera

Richard Walton Stephens

James Harold Cobert

* The Dean and the Assistant Dean are members *ex officio* of all Committees.
† The Dean of Faculties, the Dean and the Assistant Dean in the College are members *ex officio* of the Council.

STAFF OF INSTRUCTION*

MAY 1958-AUGUST 1959

- Allen William Abbott, M.C.E., *Associate in Mathematics*
 Sherman Raymond Abrahamson, Ph.D., *Professorial Lecturer in Geography*
 Kenneth Anderson Ackley, B.S., LL.B., LL.M., *Lecturer in Mechanical Engineering*
 Carroll Edward Adams, Jr., M.S., *Associate in Mathematics*
 Dean Albertson, Ph.D., *Lecturer in History*
 John Gage Allee, Jr., Ph.D., *Associate Professor of English Philology*
 Charles Harper Anderson, A.B., B.C.L., LL.M., *Lecturer in Political Science*
 Grover LaMarr Angel, A.M., Ed.D., *Professor of Education*
 Alford Archer, A.M., *Lecturer on Cartography*
 Frank Melvin Arthur, M.B.A., *Lecturer in Business Administration*
 Joseph Kahl Ash, B.S., M.Litt., *Lecturer in Accounting*
 Ruth Harriet Atwell, A.M., *Professor of Physical Education for Women*
 Kenneth Cameron Back, A.M., *Special Lecturer in the College of General Studies*
 Joseph Edmonds Bafford, M.B.A., *Associate in Accounting*
 William Elwood Baker, A.M., C.L.U., *Lecturer in Business Administration*
 Thomas Fuller Bamford, M.S., *Associate in Mathematics*
 Arthur Sparrow Banks, A.M., *Lecturer in Political Science*
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 Hash Ali Batrawi, A.M., *Associate in Psychology*
 Nicholas Anthony Beninate, M.B.A., *Associate in Business Administration*
 James Harrison Benner, LL.B., C.L.U., *Lecturer in Business Administration*
 Robert Roy Benson, A.M., *Lecturer in Psychology*
 William Earle Benson, M.B.A., *Assistant Professor of Accounting*
 Clifford Leonard Berg, M.P.A., Ph.D., *Lecturer in Public Administration*
 Stanley Louis Berlinsky, Ph.D., *Lecturer in Speech*
 Sheward Bielski, A.M., *Associate Professor of Speech*
 William Braxton Blanks, Ed.M., *Associate in Economics*
 Edwin Boehmle, J.D., M.B.A., *Professorial Lecturer in Business Administration*

*Rank shown as of September 1, 1959

- John Gordon Boswell, A.M. in Ed., *Associate in History*
 Maurice Hugh Boutelle, Ed.B., M.B.A., *Associate in Business Administration*
 Sara Frances Bragdon, A.B., *Associate in Speech*
 Carlton Ernest Brett, Ed.B., A.M., *Associate in English*
 Forest Carlyle Brimacombe, M.B.A., *Professorial Lecturer in Accounting*
 Gerald Slike Brinton, A.M., *Lecturer in Education and Workshop Director*
 David Springer Brown, Ph.D., *Professor of Public Administration*
 Kenneth August Brunner, A.M., Ed.D., *Associate Professorial Lecturer in Education*
 James Leonard Buckler, A.M., *Professorial Lecturer in Accounting*
 Isabel Blogg Burger, B.S., *Lecturer in Speech*
 Frederic Siegfried Burin II, Ph.D., *Associate Professorial Lecturer in Political Science*
 James Edward Burkart, A.B., *Associate in English*
 William Davis Butts, A.B., J.D., *Associate Professorial Lecturer in Business Administration*
 William Francis Cahill, B.E.E., M.S., *Associate in Mathematics*
 Helen Grossen Caskey, Ph.D., *Professorial Lecturer in Education*
 Burton Bryant Chandler, B.S.C., M.B.A., *Professorial Lecturer in Engineering Administration*
 Irving Gottlieb Cheslaw, Ph.D., *Lecturer in Political Science*
 I-Kua Chou, LL.B., LL.D., Ph.D., *Lecturer in Political Science*
 Warren Ira Cikins, M.P.A., C.P.A., *Associate in Political Science*
 John Fulmer Clark, Ph.D., *Lecturer in Mathematics*
 Natasha Clarkson, *Lecturer in Russian*
 William Graham Clubb, Ph.D., *Associate Professor of French*
 James Harold Coberly, Ph.D., *Professor of American Literature*
 Ralph Lee Cohen, M.B.A., C.P.A., *Lecturer in Accounting*
 Charles William Cole, Ph.D., *Professor of American Literature*
 Cletus Aelred Cole, Ph.D., *Lecturer in Psychology*
 Mary Ellen Coleman, A.M., *Associate Professor of Education*
 John Joseph Collins, A.M., *Associate in Psychology*
 Joseph Geoffrey Coleman, Ph.D., *Lecturer in Psychology*
 Ernest Elliott Cragg, A.B., C.L.U., *Lecturer in Business Administration*
 Donald Howard Crosby, Ph.D., *Associate in German*
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 Mirek Jan Dabrowski, A.B., *Associate in Speech*
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 Edwina Deans, Ed.D., *Lecturer in Education*
 Anthony Bruno DePasquale, A.M., *Associate in Mathematics*

- Harry Grubb Detwiler, A.M., *Assistant Professor of Education*
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 Glenn Crawford Dildine, Ph.D., *Professorial Lecturer in Education*
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 Jesse Frank Doubleday, A.M., *Lecturer in Business Administration*
 Conrad Hudson Drayer, A.L.A., *Special Lecturer in the College of General Studies*
 Marshall Dreese, Ph.D., *Professor of Educational Psychology*
 Alfred Theodore Drury, A.M., *Associate in English*
 Eric Brandon Eastin, Ph.D., *Professorial Lecturer in Public Administration*
 Melvin Emil Engelhardt, A.M., *Associate in English*
 Simon Isaac Ezzent, B.S., LL.B., *Associate in Business Administration*
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Joseph Bueol Johnson, A.M., Ed.D., *Professorial Lecturer in Education*

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*Myron Law Koenig, Ph.D., *Professorial Lecturer on American History*

Edward Harold Kolcum, A.B., *Associate in English*

Olen Kraus, Ph.D., *Lecturer in Mathematics*

Henry Charles Krebs, A.B., *Associate in Speech*

Joseph Leo Krieger, Ph.D., *Professorial Lecturer in Business Administration*

Frederick Charles Kurtz, M.B.A., C.P.A., *Associate Professor of Accounting*

Anthony Charles LaBue, B.S., Ed.D., *Professor of Education*

* Resigned August 1958.

- Clarence Ralph Lane, B.S. in E.E., *Lecturer in Physics*
 Arthur Rulus Lanev, Jr., Ph.D., *Lecturer in Psychology*
 John Carl Lang, A.M., Ed.D., *Associate Professorial Lecturer in Education*
 Carr Bartleson Lavell, A.M., *Associate Professor of Sociology*
 Paul Willis Leach, A.M., *Associate in Mathematics*
 Robin Poe Leggette, A.M., Ed.D., *Dewey Professor of Speech*
 Jerome Edwin Lewis, M.S., *Lecturer in Sociology*
 Helena Keehne Liebllich, A.B., LL.B., *Associate in Business Administration*
 Joseph Lima, A.M., *Lecturer in Education*
 Epling Hunt, A.M., *Associate in English*
 William Carl Lowrey, A.M., *Associate in English*
 Herbert Marion Loy, Ed.M., *Professorial Lecturer in Education*
 Raymond Albert Lucas, A.B., *Associate in Accounting*
 Florence Mary Lumsden, A.M., Ed.D., *Professorial Lecturer in Education*
 Marvin Magnusen, B.S. in C.E., *Lecturer on Cartography*
 Kenneth Margolis, B.S., *Lecturer in Mathematics*
 Ettore Mazzeo, A.M., *Associate Professor of Romance Languages*
 Hayden McCall, Jr., Ph.D., *Special Lecturer in the College of General Studies*
 William Andrew McCauley, Ph.D., *Assistant Professor of Education*
 Muriel Hope McClanahan, Ph.D., *Associate Professor of English Composition*
 Edmund Pollard McConnell, Jr., Ed.M., *Associate in History*
 Edward McCrensky, Ed.M., *Professorial Lecturer in Public Administration*
 Lawrence John McGrath, M.S., *Associate in Psychology*
 Wallace Edward McIntyre, Ph.D., *Associate Professorial Lecturer in Geography*
 Fred Austin McNamara, A.B., *Professorial Lecturer in Business Administration*
 George Elbert McSpadden, Ph.D., *Professor of Romance Languages*
 Yves Meade, Ph.D., *Associate Professor of Romance Languages*
 Marie Mears, Ph.D., *Professor of Mathematics*
 Peter Menard, A.B., *Associate in Mathematics*
 Richard William Mendenhall, B.S., *Associate in Speech*
 James Carl Messersmith, A.M., Ed.D., *Lecturer in Education*
 Joseph Louis Metivier, Jr., A.M., *Assistant Professor of Romance Languages*
 Sidney Mintz, A.M., *Lecturer in Psychology*
 Lucille Helen Mitchell, A.M., *Lecturer in Education*
 Robert Hamilton Moore, Ph.D., *Professor of English Composition*

- Sam Morgenstein, A.B., *Associate in Economics*
 Cecil Van Horn Morris, A.B., Th.B., *Associate in Spanish*
 John Anthony Morrow, A.M., *Lecturer in Business Administration*
 Joseph Patrick Murphy, A.B., LL.B., LL.M., *Associate Professor of
 Lecturer on Commercial Law*
 Lionel Vincent Murphy, A.M., *Special Lecturer in the College of Gen-
 eral Studies*
 *Richard Ernest Murphy, Ph.D., *Assistant Professor of Geography*
 Chester Myslicki, A.M., *Associate in Economics*
 Boris Erich Nelson, Ph.D., *Lecturer in German*
 William Burton Newton, Jr., Ph.D., *Lecturer in English*
 Barbara Nolen, A.M., *Special Lecturer in the College of General Studies*
 *Alfred Gaylord Obern, Ph.D., *Assistant Professor of Public Admin-
 istration*
 Morgan Organt, M.S., *Associate in Mathematics*
 Duane Leslie Packard, A.M., *Lecturer in Education*
 Pierre Sully Palmer, A.B., *Lecturer in Business Administration*
 Guy Norris Parmenter, Ph.D., *Lecturer in Geography*
 Warren Arthur Parnell, B.S., *Associate in Mathematics*
 John Joseph Pateros, B.S., C.P.A., *Lecturer in Accounting*
 Bradley Hawkes Patterson, Jr., A.M., *Lecturer in Public Administration*
 Harold Jackson Peake, M.S. in E.E., *Lecturer in Mathematics*
 Bradley Adelbert Peavy, B.S. in M.E., M.S., *Associate in Mathematics*
 Ralph Hugh Pennington, Ph.D., *Lecturer in Mathematics*
 Joseph Luther Pentecost, Ph.D., *Associate in Mathematics*
 Shirley Faye Pfoutz, A.B., *Associate in English*
 Albert Piltz, Ed.D., *Professorial Lecturer in Education*
 Louis Anthony Pingitore, Ph.D., *Lecturer in French*
 Irvin Pollin, M.S., *Associate in Mathematics*
 Theodore Polydoroff, A.B., LL.B., *Associate in Business Administration*
 Earl Elton Pontius, Jr., M.B.A., *Assistant Professor of Accounting*
 Richard Ralph Potter, M.S. in E.E., *Associate in Physics*
 Richard Thomas Pratt, M.C.E., M.B.A., *Professorial Lecturer in Engi-
 neering Administration*
 Harry Press, A.B., *Lecturer in Statistics*
 Jean Alfred Pulver, A.B., *Associate in Romance Languages*
 Raymond Lewis Randall, M.S., *Associate Professorial Lecturer in Pub-
 lic Administration*
 Richard Rainier Randall, Ph.D., *Lecturer in Geography*
 Edward Ashwell Raymond, Ph.D., *Lecturer in Political Science*
 Robert Roland Ressler, M.S., *Associate Professorial Lecturer in Chem-
 istry*
 Eric Foster Rhodes, A.M., *Lecturer in Education*

- Ray Joseph Richards, A.B., C.L.U., *Lecturer in Business Administration*
 Thomas Witwer Richards, A.M., *Lecturer on Cartography*
 James Willis Robb, Ph.D., *Associate Professor of Romance Languages*
 Edgar Alderson Robey, A.B., *Associate in Secretarial Studies*
 Blake Smith Root, A.M., Ed.D., *Professor of Education*
 Alexander Grant Rose III, A.M., *Associate in English*
 Robert George Rothwell, M.B.A., *Special Lecturer in the College of General Studies*
 Vincent Rotundo, A.M., *Associate in Political Science*
 Robert Clinton Rutledge, A.M., *Associate in English*
 Carol Ruth St. Cyr, Ph.D., *Assistant Professor of Education*
 Alfonso Sapia-Bosch, *Associate in Spanish*
 Harold Henry Saunders, Ph.D., *Associate in History*
 Robert William Schloemer, A.M., *Lecturer in Geography*
 Norton Allen Schwartz, B.S., *Associate in Statistics*
 Maured Hollander Shott, A.M., *Associate Professor of Secretarial Studies*
 Frederick Gale Shuman, Sc.D., *Associate Professorial Lecturer in Mathematics*
 Kenneth Abram Shutts, A.M., *Associate in History*
 Robert Berkeley Sibert, Jr., M.B.A., *Special Lecturer in the College of General Studies*
 Harold Wayne Silkwood, M.S., *Associate in Mathematics*
 Samuel Silva-Euenzalda, Ph.D., *Associate in Spanish*
 John William Skinner, Ph.D., *Assistant Professor of Economics*
 Robert Ernest Smith, Ph.D., *Professorial Lecturer in Engineering Administration*
 Lewis Smith, A.M., *Lecturer in Education*
 Kenneth Malcolm Sowers, A.M., *Lecturer in Business Administration*
 William Spencer, A.M., *Lecturer in Political Science*
 James Alfred Stanhope, A.M., *Associate in English*
 George Starr, A.M., *Associate in Mathematics*
 James Charles Stephens, A.M., *Professorial Lecturer in Public Administration*
 Edgar Secgar Stone, Ph.D., *Lecturer in Psychology*
 William John Strange, A.M., *Associate Professorial Lecturer in Mathematics*
 Stanley Straw, B.S. in C.E., *Associate in Mechanical Engineering*
 Henry Struhs, Jr., A.M., *Associate in English*
 John Sullivan, A.M., *Lecturer in Accounting*
 Francis Suter, A.B., C.L.U., *Lecturer in Business Administration*
 Walter Watson Sylvester, Ph.D., *Lecturer in Psychology*
 Marion Tallent, Ph.D., *Lecturer in Psychology*
 Henry Tanck, Ph.D., *Lecturer in Psychology*

- Lawrence Melvin Tanner, A.M., *Instructor in English*
 Maxine Elizabeth Teetsel, A.M., *Lecturer in Education*
Geza Teleki, Ph.D., Professor of Geology
 Howard Thomas, Ph.D., *Professorial Lecturer in Education*
 Clarence Edward Thompson, A.M., *Lecturer in Mathematics*
 Philip Duncan Thompson, Sc.D., *Professorial Lecturer in Geography*
William Robert Throckmorton, Sr., A.B., Associate in Sociology
John Arnold Timour, A.B., Associate in English
 Nancy Marie Tischler, Ph.D., *Assistant Professor of English*
 Vladimir Sergei Tolstoy, License en Theologie, M.S., *Lecturer in Russian*
 William George Torpey, Ph.D., *Professorial Lecturer in Public Administration*
 John Trott, A.M., *Lecturer in Education*
 Fred Salisbury Tupper, Ph.D., *Professor of English Literature*
 Edgar Allan Turpin, Jr., A.B., LL.B., *Lecturer in Business Administration*
 Curtis Edward Tuthill, Ph.D., *Associate Professor of Psychology*
 Arthur Uscher, M.B.A., *Associate Professorial Lecturer in Business Administration*
Pieter Willem Van Nuis, A.M., Associate in Philosophy
 Christine Edda Verdross, A.B., *Associate in German*
 Leslie Grady Wade, A.M., *Lecturer in Education*
 Paul Wakefield, A.M., *Associate in English*
 Frederick William Walther, M.B.A., *Lecturer in Business Administration*
James Robert Wason, A.B., Lecturer in Economics
 Harry Weingarten, Ph.D., *Associate in Statistics*
 Murray Samuel Weitzman, Ph.D., *Associate in Economics*
 Harland Walter Westermann, Ph.D., *Associate Professor of Geography*
 Joseph Lawrence Whyte, B.S., LL.B., C.L.U., *Lecturer in Business Administration*
 Earl Larkin Williams, A.M., *Lecturer in Mathematics*
 Dagmar Wilson, Fine Arts Diploma, *Special Lecturer in the College of General Studies*
 Hazel Emma Wilson, A.M., *Lecturer in Education*
 Hilda Kathleen Wine, B.S., Ed.M., *Lecturer in Education*
 Carl Packard Wolfe, Ph.D., *Lecturer in Public Administration*
 William Wolfgang Wolman, A.M., *Associate in Statistics*
 Aaron Joseph Wraight, Ph.D., *Professorial Lecturer in Geography*
 Burton Wright, M.S., *Associate in Psychology*
 Ronald Eugene Wyllis, A.B., *Associate in Mathematics*
William Packard Young, A.M., Lecturer in Education
 Arthur Jay Ziffer, M.S., *Associate in Mathematics*

THE GEORGE WASHINGTON UNIVERSITY

The George Washington University, established in 1821, is nonsectarian and coeducational. It includes the following fourteen colleges, schools, and divisions:

- | | |
|---------------------------|-------------------------------------|
| The Junior College | The School of Government |
| Columbian College | The College of General Studies |
| The Graduate Council | The Division of University Students |
| The School of Medicine | The Division of Special Students |
| The Law School | The Division of Air Science |
| The School of Engineering | The Summer Sessions |
| The School of Pharmacy | |
| The School of Education | |

The University is in downtown Washington, four blocks west of the White House. Readily accessible to the University are the departments of State, Treasury, Justice, Army, Navy, Interior, Agriculture, Commerce, and Labor, as well as the National Archives, the Capitol, the Library of Congress, the National Academy of Sciences, the Pan American Union, the National Gallery of Art, and the Corcoran Gallery of Art. The University is accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools. This is important to students who wish to transfer credits from one institution to another.

The University is on the approved list of the American Association of University Women and is a member of the College Entrance Examination Board.

The University's educational programs in all degree-granting schools and colleges, except the School of Medicine, enable employed students to matriculate on a part-time basis and to obtain undergraduate and graduate degrees by taking evening or Saturday classes. The Division of University Students, established in 1930, makes University work available to mature students not working toward degrees in this institution. To supplement these programs, the College of General Studies was established in October 1950.

THE COLLEGE OF GENERAL STUDIES

The objectives of the College of General Studies are to extend the adult education facilities of the University; to introduce experimental procedures in conducting programs of study for mature students; and to provide auxiliary educational services other than formal programs of study for the community.

The College of General Studies is organized into the following divisions: the Off-Campus Division, the Campus Division, and the Division of Community Services. Its offices are in building F at 700 Twentieth Street NW.

ACADEMIC STANDARDS

The staff of instruction is made up of members of the regular University Faculty and staff of instruction and other individuals of recognized academic and professional competence.

The academic standards of the University are maintained in off-campus credit courses.

Limits on the size of classes may be imposed in order to maintain the quality of instruction.

OFF-CAMPUS DIVISION

This Division works closely with personnel administrators, training officers, school officials, and others interested in developing programs of in-service training, in response to increased demands of government, education, business, and industry. Programs are also offered for service personnel who wish to work toward degrees or for professional proficiency. Off-Campus centers are listed on pages 41-51.

TYPES OF PROGRAMS

The College will offer a course in any field on the college or university level for which there is a sufficient demand and for which a qualified instructor can be found, regardless of whether or not it is included in the regular offering of the University. According to the subject matter and the wish of the organizing group, courses are arranged as credit courses applicable toward a degree, or as noncredit courses. For information concerning arrangements for courses or comprehensive programs of study, phone STerling 3-0250, Extension 486 or 441.

HOW TO ORGANIZE AN OFF-CAMPUS PROGRAM

Any organization, group, installation, or agency interested in having the University organize and conduct a course or a comprehensive educational program, should get in touch with the Off-Campus Division of the

College of General Studies (STerling 3-0250, Extension 487 or 441). A representative will be sent upon request to discuss organizational plans.

EXPLANATION OF COURSE NUMBERS

Courses are assigned dual numbers. The first is a serial number assigned by the College of General Studies at the time of registration, and the second is a departmental course number assigned by the department concerned. The serial numbers are used to distinguish one class from another when the same course is offered simultaneously at different places. The departmental numbers indicate the academic level of each course. Numbers 1-100 indicate courses on the freshman and sophomore level, 101-200 on the junior and senior level, and 201-300 on the graduate level.

Candidates for the degree of Associate in Arts with the necessary prerequisites may, with the permission of the instructor and the approval of the Dean of the College of General Studies, take courses numbered 101-200. Graduate students may, with permission, do extra work under the direction of the instructor and receive graduate credit for second-group undergraduate courses. Graduate courses may be taken, with the permission of the instructor and the approval of the Dean of the College of General Studies, for advanced undergraduate credit.

TELEVISION COURSES

In cooperation with Channel 9, WTOP TV in Washington, the College of General Studies offered during the spring and summer sessions of 1959 a Russian language television course, "Classroom Nine: Beginning Russian," every Monday, Wednesday, and Friday from 6:30 to 7:00 AM. The tuition fee for students registering for 3 semester hours of credit was \$75; for noncredit students, \$15. The registration fee included the cost of the textbook and a special telecourse guide.

The second semester of this course will be offered during the fall semester of 1959. Additional television courses may be developed and offered from time to time. For further information telephone the Office of the College of General Studies, 706 Twentieth Street NW.; STerling 3-0250, extension 487.

The Coordinator for television programs is Mrs. Lillian Brooks Brown, Director of Radio and Television, Building S, Room 22, 2025 H Street NW., STerling 3-0250, extension 370.

ADMISSION

Registration in an off-campus course constitutes admission to that course only. It does not constitute admission to degree candidacy or carry with it permission to attend University classes on campus.

Credit Courses

Registration is conducted before or at the first meeting of each class. Transcripts of previous academic work are not required. Registration is restricted to those whose qualifications indicate that they are able to complete the courses successfully.

Auditing—With the permission of the instructor, adequately prepared students may register as "Auditors". An auditor is not required to take active part in the exercises or to take examinations. No grades will be reported, and no credit will be received. Tuition is the same as for credit courses. If a course has 15 sessions a student may, with the approval of the Dean, change from credit to audit status prior to the 10th class session. If a course has 30 sessions, a student may, with the approval of the Dean, change from credit to audit status prior to the 20th class session. A student will not be permitted to change from audit to credit status after the second class session of any course.

Concurrent Registration—Students enrolled in any other college, school, or division of the University may take credit courses in the College of General Studies only by permission granted prior to registration of the dean of the college, school, or division concerned. Special forms for "Concurrent Registration" must be filled out at the time of registration in the College of General Studies.

Noncredit Courses

Noncredit courses are open to anyone interested in enrolling. When a course is organized at the request of a particular agency or group, admission may be restricted to the students recommended by the sponsoring organization.

DEGREE CANDIDACY

Application for degree candidacy should be made only if there is reasonable assurance that the student will be in the area long enough to complete the requirements. Credits granted by this College for the General Educational Development tests and for service schools and correspondence courses may or may not be accepted by another institution or by other schools and colleges of this University.

The following factors are considered in determining the eligibility of an applicant:

1. The adequacy of previous academic work as preparation for the course of study contemplated, including quantity and quality of work and the standing of the institution in which it was done.
2. Results of specified tests, when prescribed by the Committee on Admissions.
3. The aptitude of the student for the curriculum contemplated.
4. The character of the student.

The University reserves the right to refuse admission to any student who has a previous academic record of such grade as to create doubt of his ability to pursue college work successfully, or who, for any other reason, would not be an acceptable student.

Methods of Admission

FROM SECONDARY SCHOOLS

An applicant from a secondary school may seek to qualify for admission to degree candidacy by certificate or examination.

Consideration for admission is based upon the combined evidence of (1) an acceptable certificate of graduation, showing a minimum of fifteen "units" * from an accredited secondary school; (2) the principal's statement that the applicant is adequately prepared to undertake college work with reasonable prospect of success; (3) tests as specified by the Committee on Undergraduate Admission and Advanced Standing, and (4) course work completed with the College of General Studies prior to making application for admission. (See Special Requirements for Admission to Degree Candidacy.)

Certification by the principal that the student has satisfied all curriculum requirements of the school will be accepted in lieu of any prescribed distribution of units.

A desirable secondary school program in preparation for college would include: four years of English, at least two years of one foreign language, two years of natural or physical science with laboratory instruction (over and beyond the so-called "General Sciences"), two or three years of social studies (with concentration on history), one or two years of basic mathematics.

The Committee on Admission and Advanced Standing will consider the adequacy of the qualifications for academic success of an applicant who, because of unusual circumstances, does not present all the formal requirements stated above.

In all cases prospective applicants for admission should secure the Principal's Report on Applicant from either the Office of the Director of Admissions of the University or from the College of General Studies.

FROM HIGHER INSTITUTIONS

An applicant for advanced standing may be considered for admission upon the presentation of satisfactory credentials from an accredited institution of higher learning.

Properly certified courses taken at accredited colleges or universities may be applied toward a degree in the College of General Studies, subject to the curriculum requirements of the degree program for which

* A unit represents a year's study in a secondary school subject, including in the aggregate not more than 120 class periods of prepared classroom work.

admission is sought. Work of low passing grade (such as D or the equivalent) is not acceptable for transfer.

The University reserves the right to refuse credit for transfer in whole or in part, or to allow it provisionally. Credit so given may be withdrawn for subsequent poor work.

It is the responsibility of the student to have an official transcript sent directly from each educational institution formerly attended to the Office of the Director of Admissions, The George Washington University, Washington 6, D. C.

SPECIAL REQUIREMENTS FOR ADMISSION TO DEGREE CANDIDACY

To be eligible for admission to degree candidacy the student must have satisfactorily completed 6 semester hours of approved academic work in the College of General Studies. Twelve semester hours of acceptable work are required of applicants whose previous college records might make admission questionable. A grade of C or better is required for such qualifying courses toward undergraduate degrees; for Master's candidacy an average of B, or better is required for undergraduate prerequisite courses, "Satisfactory" or "Excellent" for graduate courses.

Application for degree candidacy should be filed as soon as the required 6 hours are satisfactorily completed.

Students must confer with the Assistant Dean or the Director of the Off-Campus Division before applying for admission to degree candidacy. Appointments may be made by telephone (STerling 3-0250, Extensions 441 or 487) or by letter.

ADVANCED STANDING

Methods of obtaining advanced standing and maximum credit allowed are listed below. For detailed information concerning advanced standing acceptable in the curriculum contemplated, see "Advanced Standing" under the degree concerned.

1. *Transfer of Credit*.—Courses of C grade or higher taken at other accredited colleges or universities and approved for specific curricula may be applied toward degrees in the College of General Studies.

2. *GED Tests*.—A maximum of 24 semester hours obtained on the basis of the College Level GED test (first year):

Test 1: *Correctness and Effectiveness of Expression*
English 1-2: *English Composition* (6)

Test 2: *Interpretation of Reading Materials in the Social Studies*
Political Science 9: *Government of the United States* (3)
Sociology 1: *Introductory Sociology* (3)

Test 3: *Interpretation of Reading Materials in the Natural Sciences*
Chemistry 3-4: *Survey of the Physical Sciences* (6)

Test 4: *Interpretation of Literary Materials*
English 51-52: *Introduction to English Literature* (6)

Credit earned by GED tests does not substitute for courses required as a prerequisite to a departmental major, and must not duplicate credits previously earned in college courses. Service personnel make arrangements to take GED tests, prior to or at the time of applying for degree candidacy, through the education officers; civilian students, through the Dean or Assistant Dean, at the time of applying for degree candidacy. No decision on an application can be reached until the tests have been evaluated.

3. *Service Schools*.—A maximum of 24 semester hours may be obtained on the basis of service schools satisfactorily completed, as evaluated by the United States Armed Forces Institute Guide to the Evaluation of Educational Experience in the Armed Forces. Ordinarily such credits are counted as electives. No credit will be allowed for military experience as such.

4. *Validating Examinations*.—A maximum of 12 semester hours may be obtained by validating examinations. With the approval of the Dean or the Assistant Dean and the department concerned, permission to take such examinations is granted those who are qualified by work experience and background. Validating examinations must be completed during the first full semester in which the student is registered as a degree candidate. The fee for each three-hour course examination is \$5.

5. *Correspondence Courses*.—A maximum of 12 semester hours may be earned through the successful completion of approved correspondence courses of college level.

EXAMINATION FOR WAIVING CURRICULUM REQUIREMENTS

During the first full semester of degree candidacy, a student wishing to omit a required course may, with the permission of the Dean or the Assistant Dean, take a waiver examination, the passing of which relieves him of the curriculum requirement and qualifies him for registration in an advanced course. Passing of the waiver examination does not entitle the student to credit toward a degree. The fee for each three-hour course examination is \$5.

FEES

Application fee, charged each applicant for admission to degree candidacy (payable by check or money order only and sent directly to Office of the Director of Admissions), nonrefundable \$10.00

Application for Transfer fee, charged* each applicant for transfer within the University from one college, school, or division to another, except in cases of normal progression, nonrefundable 5.00

* Payable at the time of application for transfer.

Graduation Fee	
For the degree of Associate in Arts	10.00
For the degree of Associate in Science	10.00
For the degree of Bachelor of Arts	25.00
For the degree of Bachelor of Science in Cartography	25.00
For the degree of Master of Arts	25.00
Tuition Fees	
For each semester hour for which a student registers on-campus	22.00
For each semester hour for which a student registers off-campus	16.00
The Education Program of the Armed Forces may defray a maximum of \$7.50 a semester hour, for service personnel.	
Graduate Record Examination fee (to cover two examinations), charged each candidate for a Bachelor's degree in the College of General Studies. (For procedure, see Graduate Record Examination, pages 24-25)	7.00 6.00
Fee for binding the Master's thesis	5.00
Withdrawal fee, charged each student who drops a course for which he is registered, before the first class meeting	5.00
Reinstatement fee, charged each student who is reinstated after suspension for delinquency in payment of fees	5.00
Residence fee, charged each off-campus degree candidate who wishes to maintain "in residence" status during any semester of absence from the University	16.00
Residence fee, charged each on-campus degree candidate who wishes to maintain "in residence" status during any semester of absence from the University	22.00
General Education Development Battery (GED tests) fee (college or high school)	5.00 5.00
Fee for each examination to waive a curriculum requirement	16.00
Validating Examination fee	1.00
Transcript fee, charged for each transcript of record after the first	1.00

PAYMENT OF FEES**OFF-CAMPUS COURSES**

For fifteen-week credit course Payable in 3 equal installments: the first at time of registration; the second, 30 days after the beginning of the course; the third, 60 days after the beginning of the course. A student who fails to complete all tuition payments no later than 15 days after the final installment is due will be automatically suspended and may not attend classes or take final ex-

aminations until he has been officially reinstated and has paid all accrued fees and a reinstatement fee of \$5.

For eight-week credit course

Payable in full at registration

For noncredit course

Payable in full at registration

CAMPUS COURSES

For regulations governing the payment of fees for Campus courses, see the University catalogue.

REFUND OF FEES

In no case will a refund of fees be made for eight-week credit courses or for noncredit courses unless the course is cancelled.

Fifteen-week credit courses.—In no case will the initial payment for a course be refunded unless the course is cancelled. The second and third payments will be waived or refunded if the course is dropped within the first thirty days. The third payment will be waived or refunded if the course is dropped within the second thirty days. No refund will be allowed on withdrawal subsequent to the second thirty-day period.

This regulation does not apply if a student withdraws from one course to enter another, or if a class is cancelled because of insufficient enrollment.

VETERANS EDUCATION

The George Washington University is approved to provide training for eligible persons under the provisions of Public Laws 346, 16, 550, 594, and 634. The Office of Veterans Education, Building Q, 2029 H Street NW., (Telephone: STerling 3-0250, Extension 334) operates as a service bureau for such persons interested in studying at the University and acts in a liaison capacity between the University and the Veterans Administration. Here information may be obtained concerning the educational program of the University and the procedures for securing educational benefits under the GI and War Orphans bills. Veterans should consult the Office of Veterans Education concerning possible educational eligibility and benefits before considering application to the College of General Studies for instruction or degree candidacy.

PUBLIC LAW 634 (WAR ORPHANS EDUCATIONAL ASSISTANCE ACT)

A child of a person who died of a disease or injury incurred or aggravated while on active duty in the Armed Forces during World War I, World War II, or the Korean Conflict may be eligible for educational assistance under this Act, if certain age requirements are met. In the case of a child who has not reached the age of majority, his guardian must make application for him to the Veterans Administration.

For further information concerning the benefits available under this Law, consult the University Office of Veterans Education.

PUBLIC LAW 346 (WORLD WAR II GI BILL)

The educational benefits for veterans under Public Law 346 terminated July 25, 1956, except as follows:

The Armed Forces Voluntary Recruitment Act of 1945, (Public Law 190) provided that persons enlisting or reenlisting in the Armed Forces between October 6, 1945, and October 5, 1946, may count the entire period of such enlistment or reenlistment as war service for purposes of GI Bill benefits. Such enlistees, have four years from the date that enlistment ended to begin training and nine years from that separation date to complete training under this provision.

It is suggested that a veteran having any question regarding his eligibility consult the University Office of Veterans Education.

PUBLIC LAW 550 (KOREAN GI BILL)

In order to be eligible for the benefits under this Law, a veteran must have been in service between June 27, 1950, and January 31, 1955, and must no longer be on active duty.

At least thirty days prior to registration the veteran wishing to attend under this Law should apply to the Veterans Administration for a Certificate for Education and Training, for presentation to the University Office of Veterans Education at the time of registration. A photostatic copy of his DD214 must accompany the original application for certification.

PUBLIC LAWS 16 AND 894 (VOCATIONAL REHABILITATION)

Disabled veterans desiring vocational rehabilitation under either Law should apply to the Veterans Administration for approval of their training objectives at least sixty days prior to registration.

REGULATIONS

Students in the College of General Studies are subject to and are expected to be familiar with the general University regulations stated in the University catalogue, which is available at the Office of the Director of Admissions.

ATTENDANCE

The student is held responsible to the instructor in charge of the course for all of the work of the course. All absences must be excused before provision will be made for the student to make up work missed. Absences will be excused if the number of class hours missed does not

exceed the semester hours for the course. In a fifteen-week course in which classes meet once a week, one unexcused absence is permitted. In a fifteen-week course in which classes meet twice a week two unexcused absences are permitted. In an eight-week course meeting twice a week, one unexcused absence is permitted.

Absences immediately preceding or following holiday periods are counted double.

Excuses for two or more consecutive class periods, and for absences from examinations which have been announced in advance, may be obtained only by making written application to the instructor.

SCHOLARSHIP

Grades

Grades are mailed to the student through the Office of the Registrar at the close of each semester. They are not given out by instructors or the administrative staff of the College.

Undergraduate Grading System.—*A*, excellent; *B*, good; *C*, average; *D*, passing; *F*, failing; *W*, authorized withdrawal; *Inc.*, incomplete.

The symbol *Inc.* indicates, temporarily, that all the required work of the course has not been completed and a satisfactory explanation has been given to the instructor. An "incomplete" cannot be made up after the lapse of one calendar year, except by permission of the Dean's Council.

No student may repeat, for a grade, a course in which he has received a grade of *D* or above, unless required to do so by the department concerned.

Graduate Grading System.—"Excellent", "Satisfactory", "Unsatisfactory", "Incomplete", and *W*, authorized withdrawal.

Quality-Point Index

Quality points are computed from grades as follows:

For each semester hour of the letter grade—*A*, 4 points; *B*, 3 points; *C*, 2 points; *D*, 1 point; *F*, no points.

Scholarship is computed in terms of the quality-point index. This is done by dividing the total number of quality points by the total number of semester hours for which the student has registered. Example: if a student received an *A* in one three-credit course, and a *B* in another three-credit course, he would compute his quality point index in this way:

$$A = 4 \times 3 \text{ (semester hours)} = 12$$

$$B = 3 \times 3 \text{ (semester hours)} = 9$$

$$\frac{21}{6} = 3.5$$

Courses marked *W* or *Inc.* are not considered in determining the index. If an "incomplete" is not superseded by a proper grade within one calendar year, it is automatically computed as zero quality points.

Grades in courses taken at other institutions are not considered in computing the quality-point index.

Warnings

At stated intervals during the academic year instructors file in the Office of the College of General Studies the names of those students taking courses with departmental numbers below 100, who are doing work of *D* grade or lower. A "warning" will then be sent to the student. A "warning" constitutes notice to the student that he must consult his instructor at the earliest opportunity. "Warning periods" are established during the seventh and eighth weeks of fifteen-week courses and during the third and fourth weeks of eight-week courses.

Probation

A student must maintain a quality-point index of at least 2.00 or be placed on probation.

A student who has attempted 12 or more semester hours of work and whose quality-point index is between 1.50 and 2.00 will be placed on probation for the period in which he attempts 12 additional semester hours of work. If his quality-point index is still below 2.00 at the end of this probationary period he will be suspended. The Committee on Scholarship reserves the right to extend the period of probation even if the student has earned an average of above 2.00. A student placed on probation for a third period, whether successive or after an interval, will be suspended.

Suspension

A student who has attempted 12 or more semester hours of work and whose quality-point index is below 1.50 is subject to suspension; however, a student who has a quality-point index between 1.50 and 1.60 will be considered by the Committee on Scholarship, which may retain him on probation or suspend him.

A student who is subject to probation for the third time, whether successive or after an interval, will be suspended.

A student suspended for poor scholarship may apply for readmission after an interval of one calendar year. In applying for readmission he must submit specific evidence to the Committee on Scholarship that he is better qualified to pursue college work. A student suspended twice for poor scholarship will not be readmitted.

READMISSION

A student who withdraws, is suspended, or is otherwise absent from the University for one semester or more, may re-enter and continue his work only under the rules and regulations in force at the time of his

return. Forms for readmission may be obtained from the Office of Admissions of the University. Complete and official transcripts from each institution the student has attended since making his previous application must be sent to the Office of the Director of Admissions before his application for readmission can be evaluated.

CHANGES IN PROGRAM OF STUDIES

Dropping a Course

Courses meeting once or twice a week for 2¼ hours may be dropped without academic penalty during the first 10 class periods, and courses meeting once or twice a week for 1¼ hours may be dropped without academic penalty during the first 20 class periods. The procedure is as follows:

1. Secure a University drop slip from the instructor or from the Training Officer.
 2. Fill out the drop slip and have it signed and dated by the instructor.
 3. Mail it to the College of General Studies, The George Washington University, Washington 6, D. C.
- Withdrawing from a course without academic penalty after the 10th or 20th class meeting, as the case may be, requires approval of a written request, which should be addressed to the Dean of the College of General Studies.
- Notifying an instructor of the intention to drop a course does *not* constitute an official withdrawal. Failure to follow the proper procedure will result in an automatic grade of *F* and, regardless of the time of discontinuance, will not relieve the student of financial responsibility for the entire course. (See "Refund of Fees" page 19.)

Transfer Within the University

Transfer to the College of General Studies, as a degree candidate, from another college, school, or division of the University may be made only with the approval of the deans concerned. Application for transfer should be made on the transfer form, which is available at the Office of the Director of Admissions. An insert form, obtainable at the College of General Studies, must also be filled out. (SEE ALSO "Transfer Within the University" in the University catalogue.)

A maximum of 45 semester hours is transferrable toward the degrees of Associate in Arts and Associate in Science; 90, toward the degrees of Bachelor of Arts and Bachelor of Science in Cartography; and 12, toward the degree of Master of Arts. Students transferring within the University are advised to note the residence requirements of the degree sought.

GRADUATION REQUIREMENTS

To be recommended for graduation a student must have met the admission requirements of the College, completed satisfactorily the scholarship, curriculum, residence, and other requirements for the degree to which he is registered, and be free from all indebtedness to the University.

Application for Graduation.—Filing application for a degree is the responsibility of the student and must be attended to at the time of registration for the last semester of course work needed to complete the degree requirements.

Scholarship.—The undergraduate must have a general quality-point index of 2.00. Candidates for the Bachelor's degrees must, in addition, have a quality-point index of 2.50 in the major. The graduate student must have at least the grade of "Satisfactory" in all courses.

Curriculum.—See the requirements for the degree concerned.

Residence.—A student is "in residence" only when registered for course work after making application for admission to degree candidacy or for the 6 semester hours undertaken to qualify for degree candidacy (see the specific residence requirements for the degree concerned).

If there is an interruption in the residence status, the student must apply for readmission to degree candidacy and meet any changes in curriculum which have been made since his original admission.

With the permission of the Dean, a student may be granted leave of absence; such student should, however, remain technically in residence by paying the residence fee for each semester he is absent. For the purpose of this regulation, the summer session will be disregarded.

By special arrangement, service personnel who receive military transfers when they are within 6 hours of a degree, will be permitted to complete their work elsewhere, transfer these credits to the College of General Studies, and receive a degree from this University. This procedure does not apply to Master's candidates who have been granted 6 hours of transferred credit.

Graduate Record Examination.—During the senior or final year candidates for the Bachelor's degrees in the College of General Studies are required to take the Graduate Record Examination: the Aptitude Test, which provides a measure of general scholastic ability at the graduate level; and Area Tests (achievement), which measure breadth of knowledge and understanding in three broad areas of the liberal arts: Natural Science, Social Science, and the Humanities. The examinations are conducted by the University twice a year: the Fall Testing Session (December 12, 1959) for students graduating in February, and the Spring Session (April 8, 1960) for those graduating in June or October.

As a part of registration for the final semester of undergraduate study each student is responsible for applying for the Graduate Record Ex-

aminations. Application is to be made on the appropriate form and sent to the Office of the Cashier, 725 Twenty-first Street, Washington 6, D. C., together with a check or money order for \$7, made out to The George Washington University.

Students will receive individual reports of test scores and may avail themselves of the regular transcript services of the Educational Testing Service.

Attendance and Conduct.—The University reserves the right to refuse to enter a degree upon a candidate whose attendance or conduct has been unsatisfactory.

Thesis.—A thesis, submitted in partial satisfaction of requirements for the Master's degree, must be submitted in its final form to the Dean no later than the date specified in the University calendar. Three complete copies of each thesis are required. It is the responsibility of the candidate for a graduate degree to obtain from the Dean a printed copy of the regulations governing the styling and reproduction of the thesis. These regulations are rigidly enforced. (See page 38.)

Accepted theses, with accompanying drawings, become the property of the University and are deposited in the University Library, where the duplicate copies are bound and made available for circulation. Permission to publish or adapt material in them must be secured from the Dean.

Presence at Graduation.—A candidate is required to be present at the graduation exercises unless written application for graduation *in absentia* is approved by the Dean. The application should be in duplicate, should state the reason for the request, and give the address to which the diploma is to be sent. Petition for graduation *in absentia* should be received in the Office of the Dean at least two weeks prior to graduation.

Honors

Dean's List.—To be eligible for inclusion on the Dean's List, a full-time student must have a minimum quality-point index of 3.50 for the semester concerned; a part-time student must have a quality-point index of 3.50 on the last 12 semester hours of work and must have maintained continuous registration for at least one three-hour course during the period concerned. Eligibility for inclusion again will be determined on the basis of the subsequent 12 semester hours of work.

With distinction.—The undergraduate degrees may be conferred "with distinction", at the discretion of the Dean's Council and the Committee on Scholarship, The George Washington University, if a student attains a quality-point index of 3.50 or higher on all work taken at this University except that taken during the semester immediately preceding the granting of the degree. To be eligible for this honor a student must have completed at this University at least one-half of the work required for

the degree, i.e., 30 semester hours toward the degree of Associate in Arts and 60 toward the degree of Bachelor of Arts.

Special honors.—Special honors may be awarded to any member of the graduating class for outstanding achievement in the student's major field of work on recommendation of the major department, under the following regulations:

1. The student must have his candidacy for special honors approved by the faculty member representing the major department or field not later than the beginning of the senior year.

2. The student must meet such other conditions as may be set at the time his candidacy is approved.

3. No student will be awarded special honors unless he has a quality-point index of at least 3.00 on all work taken at this University except that taken during the semester immediately preceding the granting of the degree.

4. To be eligible for honors a student must have completed at this University at least one-half of the work required for the degree prior to the beginning of the semester immediately preceding the granting of the degree.

THE LIBRARY

A student registered in the College of General Studies is entitled to the reference use of the University Library. The student receipt, issued upon the payment of tuition fees, must be presented as identification.

The loan period for most books available for home circulation is two weeks, with an additional two-week renewal. A fine of five cents will be charged for each day a book is overdue. Any book which does circulate is subject to recall by the Librarian at any time. Reserve books for collateral reading must be used in the reading rooms when the Library is open. With special permission they may be drawn for overnight use when the Library closes. A fine of twenty-five cents will be charged for the first hour or fraction of an hour and five cents for each hour or fraction thereafter that a reserve book is overdue. Grades of a student will be withheld until his library record is clear.

RIGHT TO DISMISS STUDENTS

The right is reserved by the University to dismiss or exclude any student from the University, or from any class or classes, whenever, in the interest of the student or the University, the University Administration deems it advisable to do so.

RIGHT TO CHANGE RULES

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine

TRANSCRIPTS OF RECORD

Official transcripts will be sent by the Office of the Registrar to other institutions, on request of students. Unofficial copies of records will be issued to students on request. No charge is made for the first transcript. A fee of one dollar is charged for each one thereafter. No certificate of work done will be issued for a student who does not have a clear financial record.

COUNSELING

Students in the College of General Studies may obtain counseling and assistance in program planning in the offices of the College or from representatives of the Off-Campus Division at the installations and agencies at which courses are held. Appointments may be made by calling the College of General Studies: STerling 3-0250, Extension 441, 486, or 487; or through the Education or Training Officer at individual installations. University counselors are also available at all installations and agencies during announced registration periods and, in some installations and agencies, at a scheduled time each month.

In addition, the services of the George Washington University Testing and Counseling Center are available to all students in the College of General Studies. The counseling services are designed to assist individuals in making educational and vocational plans. The program requires twelve to sixteen hours of testing, scheduled in a series of three or four appointments. During this time, information concerning past experience, general ability, interest, personality, aptitudes, and achievement is obtained. Test results are interpreted and their implications discussed with the client. The Center is prepared to furnish related occupational and educational information. Clients are referred for specialized services when required. Follow-up is provided if requested.

The services offered by the Center include: aid in vocational choice; checking present training objectives; diagnosis of academic difficulties; checking suitability of present job; and special testing services, including General Educational Development Tests and Miller Analogies Test.

Fees.—Counseling Program: community clients under 21, \$35; community clients over 21, \$45. For students who are currently registered as degree students in the University, \$7.50; for students currently enrolled in the University but not as degree candidates, \$30. General Educational Development Battery (college or high school), \$5; Miller Analogies Test, \$4. Fees for specialized testing are dependent upon the services involved.

All fees are payable at the time of testing at the Testing and Counseling Center.

Appointments may be made by phone, mail, or in person. The Center is open from 9:00 to 5:00 Monday through Friday. The office is in

Building N, 718 Twenty-first Street NW., Washington 6, D. C. Telephone: ST 3-7919 or ST 3-0250, Extension 463.

DEGREES

The College of General Studies has established programs of study leading to the degrees of Associate in Arts; Associate in Science; Bachelor of Arts; Bachelor of Science in Cartography; and Master of Arts in the fields of Controllershship, Governmental Administration, and Personnel Management.

ASSOCIATE IN ARTS

The College of General Studies offers two flexible programs of study of 60 semester hours each, leading to the degree of Associate in Arts and preparing for admission to candidacy for the degree of Bachelor of Arts. One is for students interested in a broad general education. The other curriculum prepares students for work in the field of Business Administration during the last two years of college.

The rules and regulations as stated in the Junior College section of the general catalogue of the University apply to Associate in Arts candidates in the College of General Studies, with the exception of specific modifications stated in this bulletin.

Degree candidates must complete a minimum of 50 per cent of their work off-campus and may complete up to 50 per cent of their work on-campus.

Students who plan to continue working in this College toward the Bachelor's degree must apply to the Dean at the time of filing application for graduation for the degree of Associate in Arts. Forms for this purpose are available at the Office of the Registrar.

After completing the College of General Studies requirements for the degree of Associate in Arts, students may wish to transfer to one of the other schools or colleges within the University, or they may wish to transfer to another institution. However, modifications in admission, advanced standing, and curriculum requirements permitted by the College of General Studies may not be accepted in transfer. Therefore, while registered in the College of General Studies, students should meet the requirements of the college or university to which they wish to transfer. The entrance requirements of the colleges and schools of the University are stated in the general catalogue of the University, which is available at the Office of the Director of Admissions.

ADVANCED STANDING

A maximum of 30 semester hours of advanced standing toward the degree of Associate in Arts may be earned, as explained in detail on pages 16-17.

ASSOCIATE IN SCIENCE

The curriculum leading to the degree of Associate in Science in the field of Physical Sciences is offered at the Naval Engineering Experiment Station, Annapolis, Maryland, by the College of General Studies and on campus by the Junior College. Students who have taken courses in this curriculum at installations where the entire program is not available may, if they meet the entrance requirements, transfer to the Junior College to complete the curriculum.

Requirements for the Degrees of Associate in Arts and Associate in Science

RESIDENCE

At least the last 15 semester hours required for the degree must be completed while registered as a degree candidate (see page 24) in the College of General Studies. In both the Off-Campus Division and the Campus Division, the 6 semester hours required prior to admission to degree candidacy are accepted in partial satisfaction of the residence requirement, if the courses are approved as part of student's degree program. (See page 16.)

SCHOLARSHIP

The system of grading and computing scholarship is described in detail on pages 21 and 22. For regulations concerning probation, suspension, and readmission, see pages 22 and 23.

CURRICULUM

The satisfactory completion of 60 semester hours of college work in conformity with one of the following curricula is required.

Associate in Arts Curricula

GENERAL CURRICULUM

The following curriculum leads to the degree of Associate in Arts and constitutes the first half of the General Curriculum leading to the degree of Bachelor of Arts. For the second half, see page 33.

Semester Hours

English 1-2: English Composition	6
English 41-42: Introduction to World Literature	6
English 51-52: Introduction to American Literature	6
Philosophy 51-52: Introduction to Philosophy	6
Science 1-2: General Science	6
Mathematics 1-2: Calculus	6
History 1-2: Survey of American History	6
Physical Education 1-2: Physical Education	6
Art 1-2: Survey of Art	6
Foreign Language 1-2: Survey of Foreign Language	6
Liberal Arts 1-2: Survey of Liberal Arts	6
Humanities 1-2: Survey of Humanities	6
Interdisciplinary Studies 1-2: Survey of Interdisciplinary Studies	6
Elective Courses	6
Total	60

* See page 24 for details.

Science: Chemistry 1-4; Survey of Physical Science, or an introductory course in biology, botany, chemistry, geology, physics, or zoology (if arrangements cannot be made to offer such courses off campus, students may take these courses on campus).....	22 to 24
Elective	22 to 24
Total	28

BUSINESS ADMINISTRATION CURRICULUM

The following curriculum leads to the degree of Associate in Arts in Business Administration and constitutes the first half of the curriculum leading to the degree of Bachelor of Arts with a Major in Business Administration. For the second half, see pages 34 and 35.

English 1-2: English Composition	Semester Hours
Accounting 1-2: Introductory Accounting	2
English 11: The Writing of Reports	2
*Foreign Language	2
Economics 1-2: Principles of Economics	2
Political Science 9-10: Government of the United States	2
Speech 1: Rhetoric Speaking	2
Statistics 51: Business and Economic Statistics	2
Statistics 52: Mathematics of Finance	2
Elective (Students interested in Foreign Commerce include Geography 51)	9 or 11
Total	17

Associate in Science Curriculum

This curriculum is designed for part-time students who do not wish to extend their college education beyond 60 semester hours of work. No credit toward the degree will be granted for GED tests, service schools, correspondence schools, or validating examinations. All students interested in continuing the study of physical science toward a Bachelor's degree should consult the pre-Columbian College Science curriculum listed under the Junior College in the general catalogue of the University.

Chemistry 11-12: General Chemistry	Semester Hours
Chemistry 21: Qualitative Inorganic Analysis	2

*A student offering for admission four acceptable high school units in one foreign language or two units in each of two foreign languages is not required to take any foreign language. A student is considered to have a credit for a secondary school course, according to the approximate and not the exact number of semester hours. If he offers two units in the same language, he must take one semester-hour course in the same language in the first year of college, and one semester-hour course in the same language in the second year of college. The usual minimum requirement is two years of a single language, but students who have completed more than two years of a single language, or two years of two different foreign languages, may be particularly useful. Therefore, students may take more than two years of one language and it should be graded accordingly.

The high school units accepted under this plan automatically remove the college student from the requirement, but, of course, do not count for college credit.

If Statistics 51 is not available off campus, it may be taken on campus as a course of Statistics 49. Elementary Statistical Methods (51) and Statistical Methods (52) may be substituted for Statistics 51, both of which are offered off campus, may be substituted.

English 1-2: English Composition	6
English 11: The Writing of Reports	3
Mathematics 3: College Algebra	3
Mathematics 6: Plane Trigonometry	3
Mathematics 12: Analytic Geometry	3
Mathematics 20: Calculus I	3
Mathematics 30: Calculus II	3
Mathematics 31: Calculus III	3
Mechanical Engineering 1: Graphical Communications	2
Physics 11, 12, 13: Introductory Physics	9
Physics 16: General Physics	3
Physics 55: Physical Measurements	3
Electives (Speech 1: Effective Speaking (1) and Economics 1-2 Principles of Economics (6) are recommended)	4
Total	62

BACHELOR OF ARTS

The College of General Studies offers curricula leading to the degree of Bachelor of Arts in: (1) the General curriculum, (2) Business Administration, and (3) departmental majors available to students in Columbian College or the School of Government. Many courses required for Columbian College and School of Government majors are available only on campus.

Requirements for Admission to Candidacy

The degree of Associate in Arts in the College of General Studies, or the equivalent, and the permission of the Dean (see page 16) are required. Admission to Bachelor's candidacy after receiving the degree of Associate in Arts is not automatic. With the permission of the Dean, students with limited deficiencies in the requirements for admission may be conditionally admitted to degree candidacy while they make up academic deficiencies.

Students with acceptable college records from other institutions must complete 6 semester hours, with the grade of C or better, before applying for degree candidacy.

Students with questionable previous college records may be accepted on probation to complete 24 semester hours, with the grade of C or better, before final consideration of degree candidacy.

A conference concerning plans for study is required of each applicant for admission to candidacy. Appointments may be made with the Assistant Dean or the Director of the Off-Campus Division by telephone (STERling 3-0250, Extension 441 or 457) or by letter.

*The Mathematics 3 requirement may be waived by students of acceptable high school standing. The Mathematics 6 requirement may be waived by students of acceptable high school standing.

ADVANCED STANDING

Advanced standing may be obtained in the following ways:

1. By transfer of acceptable credits from another college or university. To be acceptable, transferred credits must be for courses approved for the curriculum and of grade C or higher.
2. By validating examinations, service schools, and correspondence courses. From any combination of these sources, the maximum credit that may be obtained is 15 semester hours. The maximum credit obtained from any one of these sources may not exceed that stated on pages 16-17. No credit may be obtained in this way, however, if the student has been credited with the maximum of 30 semester hours toward the degree of Associate in Arts.
3. By GED tests. Advanced standing is limited to students registered in the General Curriculum or the Business Administration Curriculum and is granted only for courses in the Associate in Arts Curriculum (pages 29-30) which are prerequisite to advanced courses in the student's Bachelor's program.

Requirements for the Degree

Degree candidates in the Off-Campus Division must complete at least 50 per cent of the work taken at this University in off-campus courses.

RESIDENCE

The last 30 semester hours, including at least 12 hours in the major field, must be completed in residence in the College, unless special permission is granted by the Dean to take work elsewhere. This requirement applies to students transferring within the University as well as to students transferring from other institutions. Summer work and the 6 hours required prior to admission to degree candidacy (if approved as part of the degree program) may be counted in residence, but in no case may the period of residence aggregate less than 30 weeks. For regulations governing military students who are transferred when they are within 6 semester hours of their degree, see page 24.

Transfers.—Transfer students from other universities who have partially or substantially met the major requirements are required to complete satisfactorily 12 semester hours of approved work in the major field in the College of General Studies in order to receive a Bachelor's degree. This work will count as part of the minimum (30 semester hours) residence requirement. (For regulations concerning transfer within the University, see page 23.)

SCHOLARSHIP

The system of grading and computing scholarship is described in detail on pages 21 and 22. For regulations concerning probation, suspension, and readmission, see page 22.

To remain in good standing, a student must maintain a general quality-point index of 2.00 and a quality-point index of at least 2.50 in his major.

CURRICULUM

In addition to the requirements for the degree of Association in Arts, the satisfactory completion of 60 semester hours, as set forth in one of the following curricula, is required.

Bachelor of Arts Curricula

GENERAL CURRICULUM

Preregistration counseling is recommended to adapt this curriculum to the student's objectives or employment responsibilities and aims. For appointments call the College of General Studies, STerling 3-0250, extension 441.

Students planning to work toward a Master's degree in Columbian College, the School of Government, or the School of Education are advised to plan their programs of study toward the Bachelor's degree so that they will meet the prerequisite requirements of the school or college of their choice.

Candidates for the degree of Bachelor of Arts registered in the General curriculum select courses, approved by the Dean or Assistant Dean, from two of the following divisions, one of which constitutes the major and the other the minor.

- 1 *The Division of Languages and Literatures*—The departments of Classical Languages and Literatures, English, German, Italian, and Literature, Journalism, Romance Languages and Literatures, and Social Languages and Literatures.
 - 2 *The Division of Mathematics and Physical Science*—The departments in Chemistry, Geology, Mathematics, Physics, and Statistics.
 - 3 *The Division of the Natural Sciences*—The departments of Botany, Biology, Botany, Physiology, Psychology, and Zoology.
 - 4 *The Division of the Social Sciences*—The departments of Accounting, Business and Public Administration, Economics, Education, Geography, History, Philosophy, Political Science, Religion, Sociology, and Anthropology, and Speech.
- Students are to be advised, with the approval of the adviser, from among the courses listed in the student's major division. Equivalent of the student 24 hours must be in courses with departmental numbers above 100.
- Students are to be advised, with the approval of the adviser, from among the courses listed in the student's minor division. Equivalent of the student 24 hours must be in courses with departmental numbers above 100.
- Students are to be advised, with the approval of the adviser, from among the courses listed in the student's minor division. Equivalent of the student 24 hours must be in courses with departmental numbers above 100.

BUSINESS ADMINISTRATION CURRICULUM

Faculty Adviser: James Carlton Dockeray, Ph.D., Professor of Finance and Executive Officer of the Department, Building M. Room 10 (716 Twenty-first Street NW.); STerling 3-0250, Extension 512.

Aect. 193:	Business Budgeting	3
Bus. Adm. 101:	Business Organization and Combination	3
Bus. Adm. 102:	Fundamentals of Management	3
Bus. Adm. 105:	Personnel Management	3
Bus. Adm. 131:	Business Finance	3
Bus. Adm. 141:	Principles of Marketing	3
Bus. Adm. 161:	Commercial Law: Contracts, Sales, Agency, and Bailments	3
Bus. Adm. 162:	Commercial Law: Negotiable Instruments, Property, Mortgages	3
Bus. Adm. 198:	Case Problems in Management	15
Econ. 121:	Money and Banking	3
Group Option....	(To be selected from one of the following groups)	15
•Electives		60

Total.....

† *Group Option.*—The selection of the option and the courses (15 semester hours) to be taken in it must be made in consultation with the faculty adviser. Normally no more than 6 semester hours may be taken in an option other than the one selected. Consent of the adviser must be obtained if the student wishes such modification of his option group.

Group I—General Business

This group option is made up of selected courses offered by the departments of Accounting, Business and Public Administration, Economics, and Statistics.

Group II—Personnel Management

This group option is made up of selected courses offered by the departments of Business and Public Administration, Economics, Psychology, Speech, and Statistics.

Group III—Finance

This group option is made up of selected courses offered by the departments of Accounting, Business and Public Administration, Economics, Political Science, and Statistics.

Group IV—Marketing

This group option is made up of selected courses offered by the departments of Business and Public Administration, Economics, Geography, and Statistics.

Group V—Controlship

This group option is made up of selected courses offered by the departments of Accounting, Business and Public Administration, and Economics.

Group VI—Economics

This group option is made up of selected courses offered by the departments of Economics and Business and Public Administration.

Group VII—Statistics

This group option is made up of selected courses offered by the Department of Statistics.

Group VIII—Transportation and Public Utilities

This group option is made up of selected courses offered by the Department of Transportation and Public Utilities.

* To be selected in consultation with the Executive Officer of the Department of Business Administration.

† List of courses suggested for each option may be obtained from the Assistant Director of General Studies or the Executive Officer of the Department of Business Administration.

of Business and Public Administration, Economics, Geography, History, and Statistics.
Foreign Commerce.—Business Administration majors who wish to specialize in foreign commerce may request a modification of the above requirements. The modified major excludes some of the above required courses and adds others, such as a third year of foreign language, foreign markets, exporting and importing, economic geography, and other courses relating to overseas trade. Each program must be approved by the adviser.

DEPARTMENTAL MAJOR

Students who elect a major of the type offered in Columbian College and the School of Government should consult the University catalogue for the major requirements. Any deviation from these major requirements must be approved by the Executive Officer of the department concerned and the Dean of the College of General Studies.

BACHELOR OF SCIENCE IN CARTOGRAPHY

The College of General Studies offers a four-year curriculum designed to prepare students for the degree of Bachelor of Science in Cartography.

Entrance Requirements

The entrance requirements are the same as those stated on pages 14-15, 16-17, with the exceptions noted below under "Advanced Standing."

ADVANCED STANDING

Twenty-four semester hours of credit may be granted upon the successful completion of validating examinations. No credit will be given for GED tests, correspondence schools, or service school courses.

Requirements for the Degree

The residence and scholarship requirements for the degree of Bachelor of Science in Cartography are the same as those stated above for the degree of Bachelor of Arts.

CURRICULUM

Faculty Adviser: Harland Walter Westermann, Ph.D., Associate Professor of Geography, Building I, Room 301, 2145 G Street, NW, ST. 2-2145.
 Extension: 287 or 295

To be recommended by the faculty for graduation, candidates for the degree of Bachelor of Science in Cartography are required to complete the following curriculum of 128 semester hours.

Eng 1-2: English Composition	6
Eng 11: The Writing of Reports	3
Social Studies: (any two of the following two-semester courses)	18
Eng. 1-2: Principles of Economics (3-3)	
Hist. 39-40: The Development of European Civilization (3-3)	
Hist. 71-72: The Development of the Civilization of the United States (3-3)	
Pol. Sc. 9-10: Government of the United States (3-3)	
Soc. and Anthropology 1-2: Man in modern Society (3-3)	

Geol. 105-6:	Fundamentals of Geophysics	1
Phys. 11:	Introductory Physics	2
Phys. 13:	Introductory Physics	3
Stat. 91-92:	Principles of Statistical Methods I and II	4
Math. 12:	Analytic Geometry	5
Math. 20:	Calculus I	6
Math. 40:	Calculus II	7
Math. 31:	Calculus III	8
Math. 155:	Elements of Geology	9
Math. 156:	Geologic Astronomy	10
CE 12:	Surveying	11
EE 11:	Electric Circuits	12
EE 102:	Engineering Electronics	13
ME 10:	Graphical Communication	14
Geog. 51:	Introduction to Geography	15
Geog. 113:	Geomorphology	16
Geog. 114:	Weather and Climate	17
Geog. 114:	Land Use	18
Geog. 171:	Field Geography	19
Geog. 176:	Photo Geography	20
Cart. 1:	Map Interpretation	21
Cart. 2:	Air Photo Interpretation	22
Cart. 11:	Higher Surveying	23
Cart. 57-58:	Elementary Photogrammetry	24
Cart. 11:	Map Projections	25
Cart. 111:	Map Reproduction and Construction	26
Cart. 175:	Map Compilations	27
Cart. 195:	Cartographic Problems	28
Electives		29

Total

MASTER OF ARTS

Curricula in the fields of Controllershship, Governmental Administration, and Personnel Management have been established by the College of General Studies to meet the needs of adults with successful work experience who find it essential to take most of their graduate studies on campus. This program is available in the Main Navy Building and at the Pentagon and will be offered elsewhere as the demand warrants. Additional curricula will be established when the need becomes apparent.

All the work in these three curricula may be taken off-campus. If it should become necessary, up to 50 per cent of the courses may be taken on campus. In all cases the University standards for graduate study are maintained.

Graduate students who plan to work toward a Master's degree at another school or college of the University may enroll for graduate courses in the Off-Campus Division, with the approval of the dean of the school or college in which they are enrolled. In the School of Government and the School of Education, a maximum of 6 hours of approved

off-campus work will be accepted at the time of matriculation for the degree and 6 additional hours of approved courses will be permitted off-campus after matriculation.

Counseling Service

An advisory service, which is the joint responsibility of the agency sponsoring the program and the University, is available to all Master of Arts candidates. Regular members of the Faculty of the University are available as curriculum advisers in the various specialized fields.

Requirements for Admission to Degree Candidacy

To be admitted to degree candidacy the applicant must have (1) an approved Bachelor's degree (120 semester hours, which conform essentially to the requirements for a Bachelor's degree in the College of General Studies) from an accredited higher institution; (2) credit (totaling 6 semester hours), with the grade of *B* (undergraduate) or *Sat.* (graduate), for two courses approved by the academic adviser and taken in the College of General Studies prior to admission to candidacy; and (3) a quality-point index of 3.00 (*B*) in the undergraduate major. If the applicant's work history gives evidence of more competence than his previous academic record indicates, he may be admitted to candidacy on the basis of satisfactory completion of 12 semester hours of work approved by his academic adviser, acceptable results of scholastic aptitude tests, or both.

ADVANCED STANDING

A maximum of 6 semester hours of advanced standing may be credited toward the degree by transfer of credit for approved graduate work taken at an accredited college or university.

Requirements for the Degree

RESIDENCE

Of the 30 semester hours of graduate work required for the degree, a minimum of 24, which may include the thesis (6 semester hours), must be completed while registered as a degree candidate in the College of General Studies, except in the case of transfers within the University, who are required to have 12 hours of residency in the College of General Studies as degree candidates.

SCHOLARSHIP

The grade of at least "Satisfactory" in all courses is required. A student whose scholarship is unsatisfactory may be suspended by the Dean upon recommendation of the faculty adviser and the approval of the Committee on Scholarship. A Master's candidate who accumulates 9 semester hours or more of "Unsatisfactory" (including

grades of "C" or lower in the prerequisite courses) will be automatically suspended. For information concerning the system of grading, see pages 21-22.

THESIS

With the approval of the adviser, a thesis may be substituted for six hours of elective credit. (See page 25.)

The thesis subject must be approved by the director of the thesis and the faculty adviser and presented to the Dean no later than the date announced in the calendar.

The thesis in its final form must be approved by the director of the thesis and the faculty adviser and presented to the Dean no later than the date announced in the calendar. Printed copies of detailed regulations regarding the form and reproduction of the thesis (see page 25) are available in the Office of the Dean.

Payment of tuition for the thesis entitles the candidate, during the academic year of registration, to the advice and direction of the member of the faculty under whom the thesis is to be written. In case a thesis is unfinished an additional successive academic year may be granted without further tuition payment. The student must, however, be registered in residence during this period. If preparation of the thesis extends beyond the two-year period the student must register for it again and pay tuition on the same basis as for a repeated course.

COURSE SUBSTITUTION

It is the responsibility of the student to get from the faculty adviser and the Dean the written approval required for course substitutions in any of the Master's curricula. Forms for requesting course substitution are available at the College of General Studies.

COMPREHENSIVE EXAMINATIONS

The Master's candidate is required to pass a written Comprehensive Examination. At the time of the examination he may be required to submit to the examination committee copies of articles published, pertinent staff studies, reports, etc., prepared during the period of graduate study, as additional evidence of Master of Arts competency.

Master of Arts Curricula

CONTROLLERSHIP

Faculty Adviser: Arlin Rex Johnson, Ph.D., Professor of Business Administration, Hall of Government, Room 206; STerling 3-0250. Extension 493.

A. Prerequisites

In addition to the general requirements for admission to candidacy for the degree of Master of Arts, candidates are ex-

pected to have an undergraduate background in the social sciences. Students lacking this academic background may, with the approval of the adviser, substitute work experience. At least one approved course in each of the following fields is required: Accounting, Business and Public Administration, Economics, and Political Science. Additional course work may be prescribed.

B. Required Courses

	Semester Hours
Acct. 211-12: Managerial Accounting	6
Bus. Adm. 261: Seminar in Advanced Management	3
Bus. Adm. 268: Management Engineering	3
Bus. Adm. 296: Seminar in Control Systems	3
Psych. 145: Principles of Human Relations	3
Pub. Adm. 213: Administration in Government	3
Pub. Adm. 251: Governmental Budgeting	3
Pub. Adm. 252: Seminar in Planning and Programming	3
Stat. 101: Basic Principles of Statistical Methods	3

30

C. Electives

A student whose previous academic preparation makes it unnecessary for him to take all the prescribed courses in this program may substitute elective courses, with the written approval of his faculty adviser. Electives may be selected from the Governmental Administration or the Personnel Management Master's program. In exceptional cases, the faculty adviser may approve other courses as electives. Also included among the possible electives in Business Administration 299-300: Thesis*

6

GOVERNMENTAL ADMINISTRATION

Faculty Adviser: David Springer Brown, Ph.D., Professor of Public Administration, Hall of Government, Room 205, Sterling 3-2250, Extension 404 or 540.

A. Prerequisites

In addition to the general requirements for admission to candidacy for the degree of Master of Arts, candidates are expected to have an undergraduate background in the social sciences or business administration. Students lacking this academic background may, with the approval of the adviser, substitute work experience. At least one approved course in each of the following fields is required: Business and Public Administration, Political Science, Economics, and Psychology. Additional course work may be prescribed.

*Business Administration 299 is a thesis seminar offered only to candidates.

B. Required Courses

Bus. Adm. 208: Management Engineering	
Psych. 147: Problems in Human Relations	
Pub. Adm. 210: The Management Function	
Pub. Adm. 213: Administration in Government	
Pub. Adm. 231: Public Personnel Management	
Pub. Adm. 237: Intermediate Management and Supervision	
Pub. Adm. 251: Governmental Budgeting	
Pub. Adm. 252: Seminar in Planning and Programming	
Pub. Adm. 260: Seminar in Policy Formulation and Administration	
Elective	90

Total

C. Electives

In addition to the elective of 3 semester hours listed above, a student whose previous academic preparation makes it unnecessary for him to take all the prescribed courses in this program may substitute elective courses, with the written approval of his faculty adviser. Electives may be selected from the courses listed under the Controllorship and Personnel Management Master's programs. In exceptional cases, the faculty adviser may approve other courses as electives. Also included among the possible electives is Public Administration 299-300: Thesis*.

PERSONNEL MANAGEMENT

Faculty Adviser: James Norman Mostel, A.M., Associate Professor of Psychology. Office: Monroe Hall, Room 429. Telephone: STerling 3-0350. Extension 462.

A. Prerequisites

In addition to the general requirements for admission to candidacy for the degree of Master of Arts, candidates are expected to have an undergraduate background in the social sciences. Students lacking this academic background may, with the approval of the adviser, substitute work experience. At least one approved course in each of the following fields is required: Economics, Political Science, Psychology, and Statistics. Additional course work may be prescribed.

B. Required Courses

Psych. 144: Personnel Psychology	
Psych. 246: Seminar: Personnel Measurement, Testimonials (Prerequisite: Psych. 144 and an elementary course in Statistics)	
Pub. Adm. 213: Administration in Government	
Pub. Adm. 231: Public Personnel Management	

* Public Administration 299 is a thesis seminar offered only on campus.

Pub. Adm. 232: Personnel Procedures and Problems	3
Pub. Adm. 237: Intermediate Management and Supervision	3
Electives	12
Total	30

C. Electives

Electives should be selected after consultation with the faculty adviser. They should be selected from such courses as the following, which will be provided off-campus according to the polled interests of the students:

Bus. Adm. 286: Management in the Armed Forces	3
Econ. 241: Labor Economics	3
Econ. 244: Collective Bargaining (Formerly, Labor Relations)	3
Psyc. 127: Employee Counseling	3
Psyc. 146: Problems in Human Relations	3
Psyc. 245: Seminar: Employee Motivation and Morale	3
Psyc. 247: Applications of Behavioral Research Methods to Personnel Management	3
Pub. Adm. 233: Seminar in Manpower Development and Utilization	3
Pub. Adm. 251: Governmental Budgeting	3
Pub. Adm. 260: Seminar in Policy Formulation and Administration	3
Speech 121: Group Discussion and Conference Leadership	3

Also one of the following courses may be used as an elective depending on the interest and background of the candidate:

Bus. Adm. 299-300: Thesis*	6
Psyc. 299-300: Thesis	6
Pub. Adm. 299-300: Thesis*	6

OFF-CAMPUS CENTERS

The College of General Studies, through its Off-Campus Division, has offered programs in the various governmental and Armed Forces Installations listed below.

Department of Defense

THE PENTAGON, WASHINGTON 25, D. C.

After-Hours Training Program: John G. Boswell, Coordinator for the University

Room: Reception Center on the Concourse
Telephone: OX 73141

STerling 3-0250, Extension 487, 441

Type of Course Offered: Undergraduate courses leading to the Associate in Arts and the Bachelor of Arts degrees; graduate program leading to the Master of Arts degree in the fields of Controllershship, Governmental Administration, and Personnel Management

* Business Administration 299 and Public Administration 299 are thesis seminars offered only on campus

Length of Courses: Fifteen weeks in Fall and Spring semesters; eight weeks in the Summer Sessions. Restricted to military and civilian personnel of the Department of Defense

Department of the Air Force

LANGLEY AIR FORCE BASE, VIRGINIA

Educational Consultant: Robert J. Dewey

Building: T-238

Telephone: Hampton 7911, Extension 24120

Coordinator for the University: John G. Boswell

Telephone: STerling 3-0250, Extension 441

Type of Course Offered: Undergraduate program leading to Associate in Arts and Bachelor of Arts degrees

Length of Courses: Eight weeks

Open to military and civilian employees of the Air Force and to other government employees, by permission of the Commanding Officer of Langley Air Force Base

Department of the Army

ARMY MAP SERVICE, WASHINGTON 25, D. C.

Training Officer: Jerome E. McClain

Building: Erskine Hall, 6500 Brooks Lane NW.

Telephone: OLiver 4-4350, Extension 587

Coordinator for the University: John G. Boswell

Telephone: STerling 3-0250, Extension 441

Type of Course Offered: Special courses for in-service training program

Length of Courses: Fifteen weeks

Restricted to personnel of the Army Map Service

ARMY SECURITY AGENCY, ARLINGTON, VIRGINIA

Educational Adviser: Raymond Brogan

Building: T-300

Telephone: JACkson 5-6800, Extension 772

Coordinator for the University: Alexander G. Rose III

Telephone: STerling 3-0250, Extension 487

Type of Course Offered: Undergraduate program leading to the Associate in Arts and the Bachelor of Arts degrees

Length of Courses: Eight and fifteen weeks

Open to employees of the Army Security Agency

FORT BELVOIR, VIRGINIA

Educational Adviser: Emmerick Eber

Building: B-2

Telephone: EDgewater 9-5500, Extension 27154

Coordinator for the University: John G. Boswell
Telephone: STerling 3-0250, Extension 441
Type of Course Offered: Undergraduate program leading to the degrees of Associate in Arts, Bachelor of Arts, and Bachelor of Science in Cartography; and courses leading to the degree of Master of Engineering Administration in the School of Engineering of the University
Length of Courses: Eight and fifteen weeks
Open to military and civilian employees of the Army and to other government employees, by permission of the Commanding Officer of Fort Belvoir

FORT MCNAIR, WASHINGTON, 25, D. C.

Educational Adviser: Miss Margaret Lockwood
Building: Post Education Center, Building 20A, Second Floor
Telephone: JACkson 7-9400, Extension 268
Coordinator for the University: Alexander G. Rose III
Telephone: STerling 3-0250, Extension 487
Type of Course Offered: Undergraduate program leading to the Associate in Arts and Bachelor of Arts degrees
Length of Courses: Eight and fifteen weeks
Open to military and civilian employees of the Army and to other government employees, by permission of the Commanding Officer of Fort McNair

FORT MONROE, VIRGINIA

Educational Consultants: Robert J. Dewey
Building: T-238 (Langley Air Force Base)
Telephone: HAMpton 7911, Extension 24120
Paul Rahenkamp
Building: Education Center
Telephone: HAMpton 7972, Extension 22254
Coordinator for the University: John G. Boswell
Telephone: STerling 3-0250, Extension 441
Type of Course Offered: Undergraduate program leading to Associate in Arts and Bachelor of Arts degrees
Length of Courses: Eight weeks
Open to military and civilian employees of the Army and to other government employees, by permission of the Commanding Officer of Fort Monroe

FORT MYER, VIRGINIA

Educational Adviser: Miss Margaret Lockwood
Building: Post Education Center, Building 604, South Area
Telephone: JACkson 7-9400, Extension 268
Coordinator for the University: Alexander G. Rose III
Telephone: STerling 3-0250, Extension 487

Type of Course Offered: Undergraduate program leading to the Associate in Arts and the Bachelor of Arts degrees
Length of Courses: Eight and fifteen weeks
 Open to military and civilian employees of the Army and to other government employees, by permission of the Commanding Officer of Fort Myer

Department of the Navy

MAIN NAVY BUILDING, WASHINGTON 25, D. C.

Training Officers: George D. Thomas, Head, Training Branch, DCPD; Frank S. Caracciolo, Head, Professional and Academic Programs Section; Miss Kathleen V. Sullivan, Training Specialist
 Building: Main Navy Building, Room 1115, Constitution Avenue at 18th Street NW.
 Telephone: OX 66155

After-Hours Training Program: John A. Timour, Coordinator for the University. Telephone: STerling 3-0250, Extension 488

Type of Course Offered: Undergraduate courses leading to the Associate in Arts and the Bachelor of Arts degrees; graduate program leading to the Master of Arts degree in the fields of Controllershship, Governmental Administration, and Personnel Management; and courses leading to the degree of Master of Engineering Administration in the School of Engineering of the University

Length of Courses: Fifteen weeks

Open to military and civilian personnel of the Department of Defense

BUREAU OF NAVAL PERSONNEL, WASHINGTON 25, D. C.

Training Officers: Cmdr. Robert H. Rossell, Head, Officer Training Section; DeWitt Fisher, Deputy Head
 Building: Arlington Annex, Room 3713
 Telephone: OX 42403 or 42776

Coordinator for the University: John A. Timour
 Telephone: STerling 3-0250, Extension 488

Type of Course Offered: Special Courses in Human Relations Management and Public Speaking for Naval Personnel

Length of Courses: Fifteen weeks

Open to military personnel on active duty in the Department of the Navy by quota assigned to the various bureaus and offices, and civilian employees of the Department by permission

BUREAU OF ORDNANCE, WASHINGTON 25, D. C.

Training Officers: S. P. Dudzik, Head, Employee Training and Development Section; James L. Miller, Assistant Head; Mrs. Honorable Peter, Training Officer

Building: Main Navy Building, Room 3004, Constitution Avenue at 18th Street NW.

Telephone: OX 67341

Coordinator for the University: John A. Timour

Telephone: STerling 3-0250, Extension 488

Type of Course Offered: Special Courses in Human Relations and Management

Length of Courses: Fifteen weeks

Open to civilian and military personnel on active duty in the Bureau of Ordnance by quota assigned to the various divisions and offices, and to civilian employees of the Department of the Navy by permission

BUREAU OF SHIPS, WASHINGTON 25, D. C.

Training Officer: Mrs. Edna K. Trudeau, Employee Development Officer

Building: Main Navy Building, Room 2438, Constitution Avenue at 18th Street NW.

Telephone: OX 62927

Coordinator for the University: John A. Timour

Telephone: STerling 3-0250, Extension 488

Type of Course Offered: Graduate program leading to the Master of Arts degree in the fields of Controllershship, Governmental Administration, and Personnel Management; and courses leading to the degree of Master of Engineering Administration in the School of Engineering of the University

Length of Courses: Fifteen weeks

Open to military and civilian personnel of the Department of Defense

BUREAU OF YARDS AND DOCKS, WASHINGTON 25, D. C.

Training Officers: William L. Meyers, Head, Training Section; Robert J. Wilson, Training Officer

Building: Yards and Docks Annex, Room 2-A-72, Memorial Drive and H Road, Arlington, Va.

Telephone: OX 54367

Coordinator for the University: John A. Timour

Telephone: STerling 3-0250, Extension 488

Type of Course: Graduate program leading to the Master of Arts degree in the fields of Controllershship, Governmental Administration, and Personnel Management; and courses leading to the degree of Master of Engineering Administration in the School of Engineering of the University

Length of Courses: Fifteen weeks

Open to military personnel and civilian employees of the Department of Defense

DAVID TAYLOR MODEL BASIN, CARDEROCK, MARYLAND

Training Officer: William H. Struhs, Jr., Head, Training Branch
Building: 13, Room 202

Telephone: EMpire 5-2600, Extension 394

Coordinator for the University: John A. Timour

Telephone: STerling 3-0250, Extension 488

Type of Course Offered: Special in-service training courses arranged by the Training Officer

Length of Courses: Fifteen weeks

Open to military personnel and civilian employees of the David Taylor Model Basin, and to other government employees, by permission of the Commanding Officer of the installation

MILITARY SEA TRANSPORTATION SERVICE, WASHINGTON 25, D. C.

Training Officers: Maurice V. Foreman, Director, Training Division;
John J. Bean, Assistant Director

Building: T-8, Room 1217, 3800 Newark Street NW.

Telephone: OX 69620

After-Hours Training Program: John A. Timour, Coordinator for the University

Telephone: STerling 3-0250, Extension 488

Type of Course Offered: Graduate and Special Courses in Management

Length of Courses: Fifteen weeks

Open to civilian and military personnel of the Military Sea Transportation Service, and to other government employees by permission of the Commanding Officer of the installation

NATIONAL NAVAL MEDICAL CENTER, BETHESDA, MARYLAND

Information and Education Officer: Lt. (j.g.) Carol J. MacLean
USNR

Building: 102, Information and Education Office

Telephone: OLiver 4-2500, Extension 585

Coordinator for the University: John A. Timour

Telephone: STerling 3-0250, Extension 488

Type of Course Offered: Undergraduate program leading to the Associate in Arts and Bachelor of Arts degrees

Length of Courses: Fifteen weeks

Open to military and civilian personnel of the Navy, employees of the National Institutes of Health, and to other government employees by permission of the Commanding Officer of the National Naval Medical Center

NAVAL AIR TEST CENTER, PATUXENT RIVER, MARYLAND

Information and Education Officer: Ensign Robert D. Reade, USNR
Building 410, Information and Education Center
Telephone: VOLunteer 3-3111, Extension 524 or 595
Coordinator for the University: John A. Timour
Telephone: STerling 3-0250, Extension 488
Type of Course Offered: Undergraduate program leading to the Associate in Arts and Bachelor of Arts degrees
Length of Courses: Fifteen weeks
Open to military and civilian personnel of the Navy and to other government employees and civilians, by permission of the Commanding Officer of the Naval Air Test Center

**NAVAL ENGINEERING EXPERIMENT STATION
ANNAPOLIS, MARYLAND**

Training Officer: John Sivy
Building: 3-A, Administration Building, Industrial Relations Department
Telephone: Colonial 3-2611, Extension 1210
Coordinator for the University: John A. Timour
Telephone: STerling 3-0250, Extension 488
Type of Course Offered: Courses in undergraduate program leading to the Associate in Arts, Associate in Science, and Bachelor of Arts degrees; pre-engineering courses and graduate courses
Length of Courses: Fifteen weeks
Open to military and civilian personnel of the Navy and to other government employees and civilians, by permission of the Commanding Officer of the Engineering Experiment Station

NAVAL WEAPONS PLANT, WASHINGTON 25, D. C.

Training Officers: Charles A. Trainum, Supervisory Training Officer;
Mrs. Agnes Bryan, Training Officer
Building: 172, Second Floor, M at 8th Street SE.
Telephone: LINcoln 7-5700, Extension 2160, 2188, or 2416
Coordinator for the University: John A. Timour
Telephone: STerling 3-0250, Extension 488
Type of Course Offered: Undergraduate program leading to the Associate in Arts and Bachelor of Arts degrees; graduate courses in accounting, administration, and personnel management; special certificate program for supervisors to meet local in-service training needs
Length of Courses: Fifteen weeks
Open to military and civilian personnel of the Navy, and to other government employees, by permission of the Superintendent of the Naval Weapons Plant

NAVAL HYDROGRAPHIC OFFICE, SUITLAND, MARYLAND

Training Officers: Lester S. Hottle, Supervisory Employee Development Officer; Paul F. Murphy, Employee Development Officer
 Building: FOB 3, Room G-121
 Telephone: JORDAN 8-9060, Extension 248
 Coordinator for the University: John A. Timour
 Telephone: STerling 3-0250, Extension 488
 Type of Course Offered: Undergraduate program leading to the degrees of Associate in Arts, Bachelor of Arts, and the Bachelor of Science in Cartography
 Length of Courses: Fifteen weeks
 Open to military and civilian personnel of the Navy, employees of the Census Bureau, and to other government employees in the Department of Defense, by permission of the Naval Hydrographic Officer

NAVAL PROPELLANT PLANT, INDIAN HEAD, MARYLAND

Training Officer: Edward Wise
 Building: D-325, Industrial Relations
 Telephone: RIVERSIDE 3-2111, Extension 591
 Coordinator for the University: John A. Timour
 Telephone: STerling 3-0250, Extension 488
 Type of Course Offered: Undergraduate program leading to Associate in Arts and Bachelor of Arts degrees and graduate courses
 Length of Courses: Fifteen weeks
 Open to military and civilian personnel of the Navy and to other government employees and civilians, by permission of the Commanding Officer of Naval Propellant Plant

NAVAL PROVING GROUND, DAHLGREN, VIRGINIA

Training Officers: Donald E. Voekler, Senior Training Officer
 Building: Industrial Relations Building
 Telephone: NORTH 3-2511, Extension 609
 Coordinator for the University: John A. Timour
 Type of Course Offered: Undergraduate and graduate courses in Physics
 Length of Courses: Fifteen weeks
 Open to civilian and military personnel of the Department of Defense and others by permission of the Commanding Officer of the institution.

NAVAL RESEARCH LABORATORY, WASHINGTON 25, D. C.

Training Officers: Paul J. Dunn; William J. McLaughlin, Staff Training Section; Allen W. Philbrick, Science Education Section
 Building: 43, Rooms 102 and 111, 4555 Overlook Avenue, S.W.
 Telephone: JOHNSON 3-6000, Extension 856 and 858

Coordinator for the University: John A. Timour
Telephone: STerling 3-0250, Extension 488
Type of Course Offered: Undergraduate program leading to the Associate in Science degree
Length of Courses: Fifteen weeks
Open to military and civilian personnel of the Navy at the Naval Research Laboratory and other government employees by permission of the Naval Research Laboratory

UNITED STATES MARINE CORPS SCHOOLS, QUANTICO, VIRGINIA

Education Officer: Lt. Richard K. Weber, USMC
Building: Education Office, Special Services Building, Larson Gymnasium
Telephone: Quantico 1000, Extension 20749
Coordinator for the University: John A. Timour
Telephone: STerling 3-0250, Extension 488
Type of Course Offered: Undergraduate program leading to Associate in Arts and Bachelor of Arts degrees
Length of Courses: Eight and fifteen weeks
Open to military personnel and their dependents and civilian personnel attached to the Marine Corps Schools

BUREAU OF THE CENSUS, WASHINGTON 25, D. C.

Training Officers: John Vawter, Chief, Personnel Standards and Development Branch, Personnel Division; Mrs. Dorothy Paul Platzker, Training Officer (General Field), Personnel Division
Building: FOB 3, Room 1370, Suitland, Maryland
Telephone: LUdlow 4-3000, Extension 525
Coordinator for the University: Alexander G. Rose III
Telephone: STerling 3-0250, Extension 487
Type of Course Offered: Undergraduate courses leading to the Associate in Arts and Bachelor of Arts degrees
Length of Courses: Fifteen weeks
Open to all employees of the Bureau of the Census and the Naval Hydrographic Office, and to other government employees by permission

COAST AND GEODETIC SURVEY, WASHINGTON 25, D. C.

Training Officer: Mrs. Muriel Christgau, Training Branch, Personnel and Safety Division
Building: Commerce Building, Room 2204, 14th Street and Constitution Avenue SW.
Telephone: LUdlow 4-3000, Extension 525
Coordinator for the University: Alexander G. Rose III
Telephone: STerling 3-0250, Extension 487

Type of Course Offered: Undergraduate courses leading to the degrees of Associate in Arts, Bachelor of Arts, and Bachelor of Science in Cartography

Length of Courses: Fifteen weeks

Open to all employees of the Bureau of the Census and the Navy Hydrographic Office, and to other government employees by permission

NATIONAL BUREAU OF STANDARDS, WASHINGTON 25, D. C.

Registrar: Mrs. Leila L. Chapin

Building: The Maase, Room 102, Connecticut Avenue and Van Ness Street NW.

Telephone: EMerson 2-4040, Extension 366 or 7400

Coordinator for the University: Alexander G. Rose III

Telephone: STerling 3-0250, Extension 487

Type of Course Offered: Undergraduate program leading to the Associate in Arts and Bachelor of Arts degrees

Length of Courses: Fifteen weeks

Open to all employees of the National Bureau of Standards—also to all employees of government agencies and to all American citizens providing they meet the formal prerequisites

WEATHER BUREAU, WASHINGTON 25, D. C.

Training Officer: Albert V. Carlin, Chief Training Section

Building: Room 108, Main Administration Building, 24th and M Street NW.

Telephone: ADams 2-3200, Extension 285

Coordinator for the University: Alexander G. Rose III

Telephone: STerling 3-0250, Extension 487

Type of Course Offered: Graduate Courses in Meteorology

Length of Courses: Fifteen weeks

Open to all government employees by permission of the Weather Bureau

Department of Justice

FEDERAL BUREAU OF INVESTIGATION, WASHINGTON 25, D. C.

Special Agent: William E. Clark, Personnel Office

Building: Room 4513, Justice Building, 9th and Pennsylvania Avenue NW.

Telephone: EXecutive 3-7100, Extension 402

Coordinator for the University: Alexander G. Rose III

Telephone: STerling 3-0250, Extension 487

Type of Course Offered: Undergraduate program leading to the Associate in Arts and Bachelor of Arts degrees

Length of Courses: Fifteen weeks

Open to employees of the Federal Bureau of Investigation only

Department of the Treasury

COAST GUARD, WASHINGTON 25, D. C.

Training Officers: Jasper L. Kranke, Supervisory Training Officer; C. Howard Larson, Training Assistant
Building: U. S. Coast Guard Building, Room 4211, 1300 E Street NW.
Telephone: WO 4-5350
Coordinator for the University: Alexander G. Rose III
Telephone: STerling 3-0250, Extension 487
Type of Course Offered: Undergraduate program leading to the Associate in Arts and the Bachelor of Arts degrees and graduate program leading to the Master of Arts Degree
Length of Courses: Fifteen weeks.
Open to military and civilian employees of the Coast Guard and to personnel of other government agencies by permission.

Veterans Administration, Washington 25, D. C.

Employee Development Officer: Harry T. Bredenberg, Employee Relations and Training Division
Building: Veterans Administration, Main Building, Room 115, Vermont Avenue and H Street NW.
Telephone: EXecutive 3-4120, Extension 3102
Coordinator for the University: Alexander G. Rose III
Telephone: STerling 3-0250, Extension 487
Type of Course Offered: Undergraduate program leading to the Associate in Arts and the Bachelor of Arts degrees and graduate program leading to the Master of Arts Degree
Length of Courses: Fifteen weeks
Open to employees of the Veterans Administration and to personnel of other government agencies by permission

Melpar, Incorporated

FALLS CHURCH, VIRGINIA

Personnel Representative: Anthony B. DiPasquale
Building: Central Office Building, Personnel Office, 3000 Arlington Blvd., Falls Church, Virginia
Telephone: JEFFerson 4-6000, Extension 2350
Coordinator for the University: Alexander G. Rose III
Telephone: STerling 3-0250, Extension 487
Type of Course Offered: Undergraduate and Graduate courses in Mathematics
Length of Courses: Fifteen weeks
Open to Melpar employees only

EDUCATION COURSES FOR TEACHERS

Undergraduate and graduate courses for elementary and secondary school teachers have been given by the College of General Studies in coordination with the School of Education in the school systems in the areas listed below. Teachers interested in having a program in Education started in their communities should make their requests known through their Directors of Instruction to Jerry A. Rice, Jr. (STerling 30250 Extension 441), Coordinator for The George Washington University Off Campus courses in Education.

ALEXANDRIA PUBLIC SCHOOLS

T. C. Williams, Superintendent
418 South Washington Street
Alexandria, Virginia

Telephone: KIng 9-9100

ARLINGTON COUNTY PUBLIC SCHOOLS

Dr. Joseph B. Johnson, Assistant Superintendent for Instruction
1426 N. Quincey Street
Arlington, Virginia

Telephone: JAckson 2-7700

BERKELEY COUNTY PUBLIC SCHOOLS

James L. Creasy, Superintendent of Schools
Berkeley County Public Schools
Martinsburg, West Virginia

Telephone: Martinsburg 80-8

CAVERT COUNTY PUBLIC SCHOOLS

Maurice A. Dunkle, Superintendent of Schools
Prince Frederick, Maryland

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WORCESTER COUNTY PUBLIC SCHOOLS

Paul S. Hyde, Assistant Superintendent for Instruction
Worcester County School Board
Market Street
Snow Hill, Maryland

Telephone: SNOW Hill 582 and 583

CAMPUS DIVISION**Degree Program**

The Campus Division is designed for promising adults with unusual backgrounds who merit the individual consideration of this Division's experimental approach to admission, advanced standing, curricula, and evaluation of achievement. The criteria for eligibility for admission are stringent in order to limit matriculation to (1) adults well qualified to undertake college work but lacking certain academic requirements for admission to other degree-granting schools and colleges of the University and (2) adults who, through work experience, have gained broad knowledge and high competency in some area of learning. This knowledge may be validated by special examination to entitle them to advanced standing toward a degree.

Requirements for Admission

The applicant must meet the following requirements:

1. He must be an adult who has already achieved outstanding success in his vocation.
2. He must have completed 12 semester hours of work at The George Washington University while enrolled in courses in the Off-Campus Division, the Division of University Students, or the Division of Special Students, with a grade of at least C+ (quality-point index of 2.50). The student who has completed a substantial amount of college work elsewhere with excellent grades may apply for admission to degree candidacy after 6 semester hours at The George Washington University.
3. He must present valid reasons for selecting degree candidacy in the Campus Division of the College of General Studies rather than in another school or college of the University.
4. He must enroll for at least two courses a semester on Campus. Full-time study is encouraged.

The Campus Division offers programs leading to the degrees of Associate in Arts and Bachelor of Arts, as described under the Off-Campus Division, pages 28, 29-30, 31-35.

In cooperation with Columbian College, the School of Education, the School of Government, the Campus Division makes available programs leading to the degree of Bachelor of Arts with majors in the liberal arts and sciences, education, and government. Requirements for these programs are stated in the general University catalogue under the department of instruction concerned. Students selecting these majors

must satisfy the prerequisite course requirements prior to admission to candidacy or as additional work after being admitted.

The program of each student admitted to this Division is carefully planned in consultation with a faculty adviser, who takes into account the student's maturity, background, work experience, and needs.

Armed Forces Section

The Armed Forces Section of the Campus Division was established for those service personnel who wish to study full-time at the University and who have only a limited time under military orders in which to complete their programs of study. Such students register for campus courses through the College of General Studies and remain under its administrative and academic control. By permission of the Dean they may enroll in appropriate courses in the Off-Campus Division.

Military and naval personnel are eligible for admission to this section of the Campus Division if they meet the following requirements:

1. The applicant must be in attendance under official orders which give him a specified time in which to finish his degree requirements.
2. He must prove that the degree requirements can be completed in the time specified in his orders only by taking advantage of the advanced standing provisions of this College.
3. He must be in a position to enroll for full-time study.

By special arrangements with the Department of the Navy, a special section of the Armed Forces Section has been established. All naval personnel attend the University as full-time students, ordinarily for two semesters. Campus coordinator and academic adviser: Dr. John Francis Latimer, Building E, Room 300; STerling 3-0250, Extension 404.

The Air Force Advanced Management Program, sponsored by the United States Air Force Institute of Technology, provides 50 semester hours of work in advanced management and supporting fields through the educational facilities of the School of Government for a selected group of Air Force officers. Those officers who qualify, by a combination of academic background and the satisfactory completion of this program, can be awarded a Bachelor's degree by the College of General Studies. Officers who already hold a Bachelor's degree may take these courses for graduate credit toward a Master of Arts degree. Campus coordinator and academic adviser: Dr. David Springer Brown, Hall of Government, Room 205; STerling 3-0250, Extension 404 or 540. For administrative counseling, consult the Dean, College of General Studies, 706 Twentieth Street NW.; telephone: STerling 3-0250, Extension 441 or 487.

Regulations

Students in the Campus Division of the College of General Studies are subject to and are expected to familiarize themselves with the regulations of the University stated in the general catalogue, as modified in this Bulletin. Copies of the general catalogue are available at the Office of the Director of Admissions.

Professional In-Service Training

Special programs are offered to meet the in-service needs of special groups, and others will be developed as the need arises.

DIVISION OF COMMUNITY SERVICES

This Division consists of the George Washington University Reading Clinic and a program of popular credit and noncredit courses, institutes, and lectures offered both on campus and off campus.

The Division was organized to provide needed auxiliary educational services and to promote programs designed to supplement the formal educational offerings of the University.

Noncredit courses in a wide variety of subject fields may be set up at the request of any interested group. There are no entrance requirements. The length of each course is determined by the wishes of the sponsoring group and the nature of the subject to be studied.

Civic clubs, church groups, trade associations, parent-teacher associations, and other organizations which are interested in promoting and organizing informal programs of study, setting up conferences, securing lectures, or receiving specialized advice or assistance are invited to consult Mrs. Lillian F. Quigley, Assistant Director of the Division of Community Services of the College of General Studies. Call STerling 3-250, Extension 441.

Among the courses offered by the Division of Community Services are the following:

INVESTMENTS

A noncredit course in "How to Invest from \$50 to \$50,000" is frequently offered in answer to popular demand. Topics include insurance, bank deposits, government bonds, real estate, various types of securities, the New York Stock Exchange, mutual funds, investment advisory services, and the importance of fitting the financial plan to the individual.

WRITING FOR CHILDREN

A noncredit elementary workshop course is offered for beginning writers during the fall semester. An advanced workshop is offered in the spring semester.

BUSINESS AND ECONOMIC ANALYSIS FOR SECRETARIES

Each year, in cooperation with the National Secretaries' Association, a sixteen-week noncredit lecture course is offered in preparation for the Certified Professional Secretary's Examination. The course is generally offered in the spring semester.

MANAGEMENT FOR RESEARCH, DEVELOPMENT, AND TESTING LABORATORIES

This noncredit course is designed to train executives in the development of overall managerial skills. Specific objectives of the course are to

give the executives a general familiarity with the tasks, problems, techniques, and methods of management; to relate these general principles to the functioning of their specialized business activities; and to provide them with a forum for discussing common problems and interchanging views, knowledge, and experience.

CHARTERED LIFE UNDERWRITERS PROGRAM

In cooperation with the Chartered Life Underwriters Institute, the College of General Studies has initiated a program of credit courses designed to assist insurance men in preparing for Chartered Life Underwriters' examinations.

HOSPITAL ADMINISTRATION

A credit course of lectures and discussions broadly covering the field of hospital administration is designed especially for those working in hospitals at the executive and department-head level and for those employed in federal hospital programs who deal with various phases of hospital programming and operations.

Topics include the history of hospitals, the scope and organization of voluntary and federal hospital programs, the functional elements of hospitals, with emphasis on the application of modern management tools in Hospital Administration.

NURSING EDUCATION

A credit course in the management of the hospital nursing unit is offered for nurses in the metropolitan Washington area. Emphasis is placed on the relation of the hospital nursing unit to the hospital and community, current concepts and standards in nursing service and their application to unit management, and the development of techniques for the implementation of concepts and policies. Other credit courses in this field are being developed.

INSTITUTE FOR PARENTS

This noncredit "Institute for Parents" emphasizes four areas of study: understanding the gifted child, understanding reading problems, understanding modern school methods, and understanding the early adolescent. The primary objective of the class is to help parents understand their children in relation to themselves as parents, to the school, and to the community. It is planned by the Fairfax County community to make this an annual Institute.

PROGRAM PLANNING FOR ORGANIZATIONS

This noncredit course is designed especially for civic and club workers. Among the topics covered are the following: planning individual pro-

grams, public relations, the responsibility of leadership, and exploring projects and activities for a particular group.

ADMINISTRATIVE DEVELOPMENT

A noncredit course in techniques of management and instruction is offered as part of the Administrative Development Program of the Office of the Adjutant General, Department of the Army.

ADVANCED INVESTMENT MANAGEMENT

A noncredit course in management is available to those with a basic knowledge of the stock market and investment principles. Topics covered include the selection of stocks most suitable for specific objectives.

AMERICAN SPEECH AND DICTION

This noncredit course available to employees of foreign embassies, includes articulation drills, stress and intonation patterns in "standard" American English, discussion of dialect differences, and vocabulary-building exercises. Individually designed exercises and daily recordings on tape are used.

ELEMENTARY ALGEBRA

This noncredit course in elementary algebra through quadratic equations is designed to prepare students for college algebra.

GOVERNMENTAL ACCOUNTING

This noncredit seminar is designed for students of accounting from other countries. Topics covered include the principles and procedures of budgetary accounting as a tool of management in developing and maintaining budgetary control, a consideration of cost accounting and internal auditing. Each participant's progress, background, and interests determine the level of his study and research.

INTERNATIONAL COOKERY

This noncredit lecture and demonstration course on the basic dishes of various countries illustrates different methods of cooking and characteristic seasonings. Tastiness, low cost, high nutritional value, and availability of ingredients are considered in the choice of recipes.

INTERNATIONAL COOPERATION ADMINISTRATION PROGRAM

In cooperation with the International Cooperation Administration a fall and spring semester program is offered to the foreign students who are participants. Courses are offered on campus and include the following: Public Administration, Administrative Management, Governmental Accounting, Governmental Auditing, Tax Administration,

Local Government Administration, Seminar on Public Finance and Economic Development, and English.

INTRODUCTION TO PROFESSIONAL WRITING

A noncredit course is offered in the essentials of writing technique. Manuscripts are submitted for the consideration and criticism of the teacher and class. Analysis is made of magazine writing opportunities for free-lance writers.

PLANNING FOR RETIREMENT

This noncredit course is designed to help men and women plan efficiently for retirement. In ten sessions it covers a constructive program of thought and action for retirement planning, a program which has been used by many of the large business and industrial firms.

PREPARATION OF SUMMARIES

This noncredit course gives training in accurately summarizing classified documents and information in readable form.

THE GROWTH OF POLITICAL PARTIES IN THE UNITED STATES

This noncredit course treats chronologically the growth of American political parties. It underlines those factors in our political history which are relevant to the current party struggle and the future development of politics: the role of party conventions; the importance of party platforms; the influence of particular personalities; the continuance of certain issues; the impact of wars and other disasters; the mechanisms for achieving party victory; and, with special attention, the relationship between minor parties and splinter groups and the fundamental party nature of our political system. Parties are considered socially and ethically as well as politically.

ADMISSION AND REGISTRATION

A simplified system of admission and registration is used in noncredit courses.

Such courses are open to any individual interested in enrolling. When a noncredit course is organized at the request of some particular person or group, admission may be restricted to the students recommended by the sponsoring organization. Classes may be limited in size in order to maintain the standards desired.

FEES

The tuition fees for noncredit courses are determined by the length and nature of the course.

READING CLINIC

The Reading Clinic, Binney Hall, 2018 I Street NW., offers individual diagnostic and corrective services for all levels: primary, elementary, secondary, and adult. In addition, special reading improvement classes are conducted on the high school and adult levels.

A complete diagnosis includes psychological tests and vision, hearing, and dominance tests, as well as the various reading and spelling tests. Results are interpreted, and a written report is presented in conference with the parents or the individual.

The special reading classes for high school students and adults are offered throughout the year at stated intervals. Emphasis is placed on improvement of vocabulary, speed, comprehension, and study skills. Machines such as the tachistoscope, rate accelerator, and controlled timer are used for increasing speed of comprehension.

	FEES
Individual Diagnosis	\$10.00
Individual Reading Instruction	4.00 per hour
Individual Instruction	3.00 per hour
Small Groups with common reading difficulties	2.50 per hour
Materials fee	4.00

All fees for diagnostic and corrective work are payable in advance at the Office of the Cashier. Reading Improvement Course fees are payable in full at the time of registration. For further information, contact Miss Mary E. Coleman, Director, or Mrs. Laura E. McCarty, Assistant Director, Binney Hall, 2018 I Street NW.; STerling 3-0250, Extension 491 or 508.

CAMPUS OFFICE DIRECTORY

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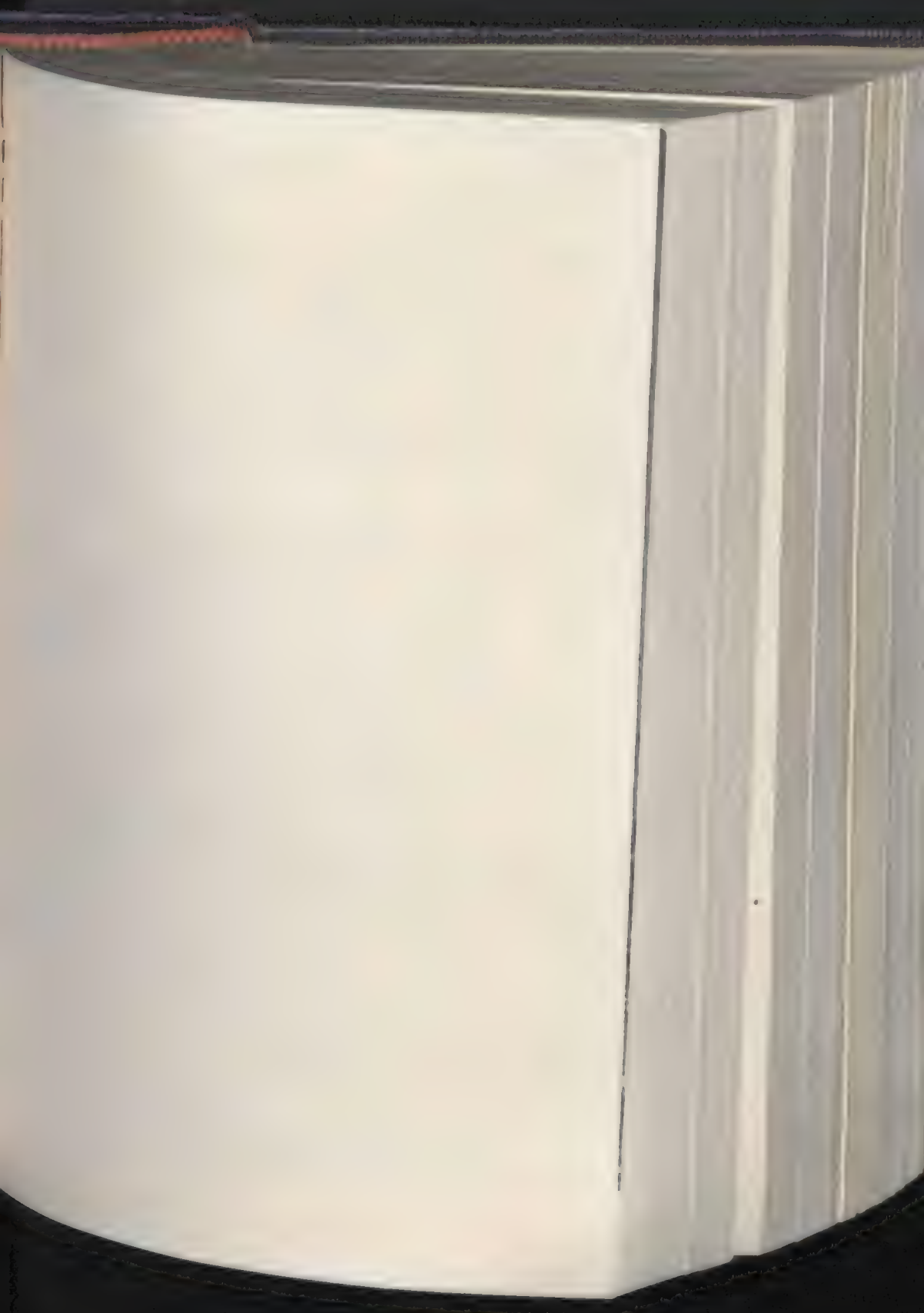
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School of Medicine—Research and Administration Buildings



THE SCHOOL OF MEDICINE

1959-60

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CALENDAR OF THE SCHOOL OF MEDICINE

1959-60

Date	Day	Occasion
1959		
FALL SEMESTER:		
Sept. 10	Thursday	Registration for the academic year 1959-60
Sept. 14	Monday	Classes begin
Nov. 11	Wednesday	Veterans Day. Holiday
Nov. 26-28	Thursday through Saturday	Thanksgiving recess
Dec. 21-Jan. 2 ...	Monday through Saturday	Christmas recess
1960		
Jan. 4	Monday	Classes resume
Jan. 18-23	Monday through Saturday	Examination period
SPRING SEMESTER:		
Jan. 26	Monday	Classes resume for the spring semester
Feb. 22	Monday	Winter Convocation. Holiday
April 15 and 16 ...	Friday and Saturday	Easter recess
May 16-24	Monday through Tuesday	Examination period
May 29	Sunday	Baccalaureate Session
May 30	Monday	Memorial Day. Holiday
June 1	Wednesday	Commencement
Sept. 15	Thursday	Registration for the academic year 1960-61

THE UNIVERSITY

THE BOARD OF TRUSTEES

The Board of Trustees of the University is composed of the President of the University ex officio and the following persons by election:

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 Maxwell Windom Ellison, A.B., LL.B., LL.D., *Secretary*
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 Edwin Webb, A.B., LL.D.
 George Wetmore, Ph.D., Sc.D.
 Bennett Wilson
 John W. Wise, Ph.B.

selected by the alumni

THE UNIVERSITY

HISTORY AND ORGANIZATION

The idea of a university in the Capital of the Nation was sponsored by George Washington, who during his public life urged the establishment of such an institution and who in his will left fifty shares of stock in the Potomac (Canal) Company for the endowment of a university to be established in the District of Columbia "to which the youth of fortune and talents from all parts thereof might be sent for the completion of their Education in all the branches of polite literature:—in arts and Sciences, in acquiring knowledge in the principles of Politics & good Government".

The George Washington University operates under a charter granted by an act of Congress of February 9, 1821, to Columbian College in the District of Columbia. In 1873 the name was changed to "Columbian University" and in 1904 to "The George Washington University".

The University as it is now organized consists of the Junior College, comprising the work of the freshman and sophomore years; Columbian College, the senior college of liberal arts, which offers work leading to the Bachelor's and Master's degrees; the Graduate Council, which offers work leading to the degree of Doctor of Philosophy; the professional schools, which include Medicine, Law, Engineering, Pharmacy, Education, and Government; the College of General Studies; the Division of University Students; the Division of Special Students; the Division of Air Science; and the Summer Sessions.

The George Washington University is a privately endowed University located on a well planned campus in the center of Washington within a few blocks of the White House. The government and educational management of the University are vested in a self-perpetuating Board of Trustees, with the President of the University serving as an ex officio member of the Board.

ACADEMIC STATUS

The George Washington University is accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools. This is important to students who wish to transfer credits from one institution to another.

The University is on the approved list of the American Association of University Women and is a member of the College Entrance Examination Board.

The School of Medicine

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The School of Medicine has had continuous approval by the American Medical Association and is a member of the Association of American Medical Colleges. The degree of the School of Medicine is recognized by all State Examining Boards.

LOCATION

The University is in downtown Washington within a few blocks of the White House and the Federal Triangle of Government buildings, which house many of the departments of the Federal Government, and such places of especial interest to medical students as the Smithsonian Institution, the National Museum, and the Botanic Gardens.

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THE SCHOOL OF MEDICINE
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1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

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GENERAL INFORMATION

INTRODUCTION

The School of Medicine of The George Washington University was opened in March 1828. Of the medical schools now in existence in the United States, it is the eleventh in chronological order of founding. The University Hospital and Dispensary were established in 1898 as a part of the organization of the School. The new George Washington University Hospital was opened in 1948, and the Cancer Clinic building was completed in 1954. Additional clinical facilities are used at the District of Columbia General Hospital; Children's Hospital, St. Elizabeths Hos-

pital, and Mt. Alto Veterans Administration Hospital. The School of Medicine maintains close affiliation not only with the various divisions of the University, but also with the numerous medical research and scientific establishments of the Federal Government in the Nation's Capital. Washington provides world renowned library facilities, comprehensive museums, and excellent recreational facilities which are available to students.

OBJECTIVES

The purpose of the School of Medicine is to prepare men and women in the art and science of medicine to meet the health needs of a growing, ever changing society. It is the responsibility of the School of Medicine to provide its students with a systematic plan of instruction in the basic medical sciences, with well guided clinical experience, with opportunities for expression in research, and with a philosophy in keeping with the highest ethics of the profession.

For undergraduates the aims of the School of Medicine are (1) to select students of superior ability and character; (2) to teach the theoretical principles, laboratory techniques, and clinical applications of the medical sciences; and (3) to provide a diversity of clinical experience through well supervised clerkships in University, public, and federal hospitals providing facilities for all specialized fields of medicine.

The aims of the School of Medicine in graduate and post graduate education are (1) to provide well planned services for internship and resident training in both general and specialized practices; (2) to direct an expanding program of applied research, integrated with teaching at the School of Medicine, and in keeping with the growth of Washington as one of the world's great centers of medical investigation; and (3) to provide postgraduate instruction in recent advances in medicine.

To achieve these objectives the School of Medicine has developed a progressive plan of instruction and a balanced, comprehensive curriculum. To carry out the program the University seeks to maintain a faculty of adequate size and outstanding ability, making use of facilities which provide exceptional opportunities for research and clinical training.

PLAN OF INSTRUCTION

The curriculum is a progressive one, beginning with basic medical science and expanding to include the more complex aspects of the prevention of disease and care of the sick. The teaching program is organized under the various departments of the School of Medicine. (See "Courses of Instruction", pages 67-111.)

The schedule for the first year begins with an orientation week designed to introduce the new students to the Faculty, to the upperclassmen, and to the environment for their medical education. The students meet for informal panel discussions with upperclassmen and members of

the Faculty on such subjects as curriculum, medical terminology, use of library facilities, ethics and aims of the medical profession, and student health.

First year instruction is given in anatomy, biochemistry, and physiology using the classroom and laboratory facilities of the School of Medicine. Early in their medical careers students are encouraged to participate in research. Practical problems in patient care are introduced at conferences in the University Hospital.

Having completed the preliminary study of structure and function of the normal body, the student progresses in the second year to a consideration of disease processes and mechanisms. The various microbial agents capable of causing disease are studied in the course in microbiology, and the effect of these and other harmful substances upon the body are studied in the course in pathology. The modes of action of various therapeutic agents are studied in the course in pharmacology. Introductory lectures and demonstrations in the clinical sciences are given during the second semester in order to prepare the student for the responsibilities of the following year.

In the third year the student is assigned to the District of Columbia General Hospital for lectures, conferences, and clinical studies. He serves in the various divisions of the hospital assisting in the preparation of clinical records and performing certain clinical laboratory examinations. He learns to carry out the usual ward procedures and to use certain diagnostic and therapeutic instruments. During this period instruction is individual or in small groups. The instructor reviews the student's observations at the bedside and guides him in the development and application of his knowledge.

During the summer period following the third year each student is required to spend eight weeks in one of the clinical facilities of the School of Medicine.

In the fourth year the student's responsibility for in-patient care continues and enlarges, but at least an equal part of his time is spent in the study and care of clinic patients. The University Hospital, the District of Columbia General Hospital, Children's Hospital, Mount Alto Veterans Administration Hospital, and St. Elizabeths Hospital provide the student with experience in many fields. In this final year of normal medical education stress is placed upon the total patient and his environment so that emotional and economic as well as physical factors may be considered in the restoration of the individual to a state of health and happiness.

Upon satisfactory completion of the four-year course of the School of Medicine, the student is well prepared for graduate training leading to a career in research, medical education, general or specialty practice, or government service.

THE CURRICULUM

Subject	Lecture	Laboratory or Clerkship	Conference	Total
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FIRST YEAR

Gross Anatomy	112	232	—	344
Embryology and Histology	64	128	—	192
Neuroanatomy	32	56	—	88
Biochemistry	70	160	32	262
Physiology	112	152	32	296
Biostatistics	16	—	—	16
Disaster Medicine	16	—	—	16
Introductory Medical Psychology	16	—	—	16
Psychopathology	16	—	—	16
Total	460	748	64	1,272

SECOND YEAR

Bacteriology	64	144	16	224
Pathology	64	136	32	232
Pharmacology	40	80	24	144
Physical Diagnosis	16	96	—	112
Psychiatry	32	48	—	80
Clinical Microscopy	16	32	—	48
Medicine	48	—	—	48
Surgery	32	—	—	32
Hygiene	32	—	—	32
Pediatrics	32	—	—	32
Neurology	32	—	—	32
Ophthalmology	16	—	—	16
Radiology	16	—	—	16
Forensic Pathology and Medical Jurisprudence	16	—	—	16
Dermatology	16	—	—	16
Total	472	536	72	1,080

Subject	Lecture, Conference, or Clinic	Laboratory or Clerkship	Total
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THIRD YEAR

Anesthesiology	16	—	16
Clinical Pathological Conference	16	—	16
Medicine	64	240	304 304
Medical Laboratory	—	60	60
Neurology	16	60	76
Obstetrics and Gynecology	96	120	216
Ophthalmology	16	—	16
Pediatrics	32	120	152
Physical Medicine	16	—	16
Psychiatry	16	—	16
Radiology	16	—	16
Surgery	112	240	352
Otolaryngology	16	—	16
Admission and Emergency	—	120	120
Therapeutic Conference	32	—	32
Urology	16	—	16
Total	448	960	1,440

SUMMER CLERKSHIP

Medicine, Surgery, Obstetrics and Gynecology or Pediatrics—eight weeks between third and fourth years.

FOURTH YEAR

Cancer Clinics	—	120	120
Clinical Pathological Conference	28	—	28
Forensic Medicine	12	—	12
Medicine	—	160	160
Obstetrics and Gynecology	—	24	24
Pediatrics	28	24	52
Psychiatry	—	120	120
Public Health Practice	5	—	5
Surgery	—	160	160
Surgical Anatomy	15	—	15
Surgical Pathology	12	—	12
Total	100	1,440	1,540

EQUIPMENT AND FACILITIES

Medical School Building.—The building housing the School of Medicine is a five-story structure with lecture rooms, classrooms, students' rooms, and the following laboratories: anatomy; bacteriology, hygiene, and preventive medicine; biochemistry; pathology; pharmacology; and physiology.

They are fully equipped to enable students to pursue adequately the laboratory courses and to acquire the technical skill necessary in modern clinical and investigative work.

Research and Administration Building.—The Research Building houses special laboratories for graduate and staff research in the departments of Anatomy; Biochemistry; Pharmacology; Physiology; and Bacteriology, Hygiene, and Preventive Medicine. Special facilities are provided for the study of radio-active compounds, for tissue-culture techniques, and for virological procedures. Selected students are invited to participate in certain aspects of the research program either on a volunteer basis or with the support of special Research Scholarships.

On the first floor, the west wing is occupied by a modern medical library; the east wing houses the administrative offices of the School of Medicine. Photographic laboratories and other facilities for audiovisual aids to education are on the second floor.

Medical Library.—The Medical Library in well equipped quarters on the first floor of 1339 H Street NW., contains 17,700 carefully selected volumes, including the new medical works and the principal medical journals.

Interlibrary loan service is maintained with other medical and scientific libraries.

The Medical Library is open from 9:00 A.M. to 10:00 P.M. each class day, Monday through Friday, and from 9:00 A.M. to 5:00 P.M. Saturday.

A branch of the Medical Library is maintained in the University Hospital for the use of the resident physicians, interns, and students. It is open Monday through Friday, 1:00 to 5:00 P.M. and 6:00 to 9:00 P.M. and Saturday, 1:00 to 5:00 P.M.

The George Washington University Hospital.—This 420-bed hospital is staffed and directed by the Faculty of the George Washington University School of Medicine. It provides excellent clinical opportunity for the instruction of medical students. Virtually every specialty in the fields of medicine and surgery has assigned space and equipment in both the outpatient department and the bed-patient section of this modern hospital.

GOVERNMENT MUSEUMS

The Armed Forces Institute of Pathology, on the grounds of Walter Reed Army Medical Center, affords unexcelled opportunity for study of

conditions met in general medicine and surgery as well as those of special military significance. Its collection of anatomical and pathological specimens comprises material received from all areas of the world and is unequaled in this country. The Museum of Hygiene, the National Museum, the Smithsonian Institution, the Botanic Gardens, and the various collections of the Department of Agriculture all afford opportunity for study of materials of special interest in various areas of Medicine and its allied sciences.

CLINICAL FACILITIES

Students at the George Washington University School of Medicine receive clinical training at the University Hospital, at the new University Cancer Clinic, and at four affiliated hospitals. In the first year the medical student begins his work in the hospital as well as in the lecture halls and classrooms.

The George Washington University Hospital.—All clinics are under the supervision of the Dean and the chiefs of services. The individual student has direct responsibility to patients under supervision. Clinical and clinical pathological conferences are held in which the history of patients, the physical findings, laboratory records, and the post-mortem pathology, are presented and correlated.

The Outpatient Department.—The Outpatient Department has clinical facilities for each Service in the Hospital. Fourth-year students are assigned in rotation by section for clinical instruction in the Outpatient Department.

The George Washington University Cancer Clinic.—The Helen L. and Mary E. Warwick Memorial building, opened in 1964, houses the Cancer Detection Clinic and special laboratories for research related to the nature, diagnosis, and treatment of cancer.

The facilities of the Cancer Detection Clinic are used for the teaching of medical students. The diagnosis and treatment of various forms of neoplasms are presented. The results of the treatment of neoplasms are evaluated by follow-up studies.

District of Columbia General Hospital.—Washington's large city hospital has 1,238 beds and an outpatient department in which approximately 138,810 patient-visits are made each year. It provides clinical opportunities in virtually every branch of medicine and surgery.

Children's Hospital.—This is one of the largest and best known hospitals for children in the United States. Medical students receive training and clinical experience in pediatrics on both clinic and inpatient services.

St. Elizabeth's Hospital.—This famous hospital celebrated the 100th anniversary of its founding in 1955. This hospital cares for 8,500 pa-

tients a year with virtually every known psychiatric and neurologic disorder. The George Washington University medical students begin their studies in psychiatry in their first year and these studies continue throughout the four years. Much of their clinical instruction in psychiatry and neurology is received at St. Elizabeths. Prominent psychiatrists and neurologists on the St. Elizabeths staff are members of the George Washington University School of Medicine faculty. Additional clinical experience in psychiatry and neurology is gained by students at the George Washington University Hospital Psychiatric Departments and in the Outpatient Department of the University Hospital. Special lectures and clinical work in child psychiatry are given in the Psychiatric Department of Children's Hospital.

Mt. Alto Veterans Administration Hospital.—Clinical experience in both medical and surgical subjects is provided at this Veterans Administration hospital.

ADMISSION

APPLICATION FOR ADMISSION

1. Full directions for application will be furnished on request. The applicant should ask the registrar of each college previously attended to send an official transcript of record to the Director of Admissions, The George Washington University, 2029 G Street NW., Washington 6, D. C. Photostatic copies of credentials without the original signature of the certifying authority are not satisfactory. It is the responsibility of the applicant to see that all credentials are forwarded to the Director of Admissions of the University.

2. Two recent photographs, with signatures, are required of each applicant.

3. Applicants for admission are required to take the Medical College Admission Test, sponsored by the Association of American Medical Colleges, in advance of the academic year for which application is made.

4. A fee of \$10 to defray the cost of completing the records for final consideration by the Committee on Admissions must accompany each application.

ENTRANCE REQUIREMENTS

College Courses

Chemistry	8
Inorganic (including 4 hours of laboratory).....	8
Qualitative analysis may be counted as part of this requirement.	6-8
Organic (including laboratory).....	8
The equivalent of a one-year college course	8
Biology (including 4 hours of laboratory).....	8
A course in either general biology or zoology	6
Physics (including at least 2 hours of laboratory).....	6
English Composition and Literature.....	6

With the exception of these specific requirements applicants are urged

to follow their personal interests in developing their premedical courses of study. A well-balanced program, rather than a specific field, is the criterion by which an applicant is judged. It is not advisable to take courses that appear to cover subject matter in the medical program.

While well-qualified candidates are eligible for admission after completing the minimal 90 semester-hour requirement, the majority of applicants are found to be better qualified for the study of medicine after four years of college work.

ADVANCED STANDING

A student who has satisfactorily completed one or two years at any other medical school approved by the Association of American Medical Colleges and the American Medical Association, and who has the necessary preliminary educational requirements, may apply for advanced standing. Before final acceptance to the third year class, the applicant must have passed Part I examination of the National Board of Medical Examiners.

SELECTION PROCEDURES

The Committee on Admissions is guided in the selection of students by the applicant's academic ability, the results of the Medical College Admission Test, and personal qualifications as determined by letters of reference and personal interview. Applicants are interviewed only by invitation of the Committee.

Each applicant is notified as soon as possible after the Committee makes a decision.

An applicant who is offered a place in a class is required to notify the Director of Admissions within two weeks of his intent to accept the place reserved for him and to remit a deposit of \$100 not later than January 15th prior to the opening of classes of the academic year for which he applied. This deposit will not be refunded after January 15th. It will be credited toward the tuition for the first semester.

Accompanying the offer of a place in class will be forms for a report on your physical condition. This report must be completed by your physician and returned to the Director of Admissions within two weeks of the receipt of your letter of acceptance.

REGISTRATION

For the academic year 1959-60, registration will be conducted at the Medical School, 1335 H Street NW., from 10:00 A.M. to 4:00 P.M., September 10. Registration is for a period of one academic year.

FEES AND FINANCIAL REGULATIONS

The following fees have been adopted:

Tuition fee, for each academic year.....	\$1,000.00
Fee for special examinations, for each subject.....	8.00
Graduation fee.....	25.00

PAYMENT OF FEES

Fees for the year are \$1,000, payable in two installments of \$500 each in advance of the beginning of each semester.

All fees are payable at the Office of the Cashier of the University, 735 Twenty-first Street NW., except as some other arrangement may be announced. Amounts due must be paid on or before registration day for the fall semester and on or before such date as may be announced by the Office of the Treasurer for the spring semester.

Registration in the School of Medicine is for the full academic year. After a student has entered the course of instruction he is obligated for the full tuition. Acceptance by the School of Medicine of a student's fees does not in any way obligate the School to accept the student for any subsequent year and the right is reserved to require the withdrawal of any student whenever, in the interest of the student or the School, the Faculty deems it advisable to do so.

COST OF TEXTBOOKS AND STUDENT EQUIPMENT

The minimum cost of necessary textbooks and student equipment (microscope, drawing materials, glass slides, clinical thermometer, stethoscope, hemocytometer, uniforms, etc.) is approximately as follows: first year, \$400; second year, \$250; third year \$125; fourth year, \$80; total \$855.

A fee of \$1 a semester is charged for the use (optional) of a locker.

FELLOWSHIPS AND GRADUATE ASSISTANTSHIPS.
SCHOLARSHIPS, PRIZES, FINANCIAL AID

FELLOWSHIPS AND GRADUATE ASSISTANTSHIPS

The following fellowships and graduate assistantships are available. Applications should be submitted not later than April 1 preceding the period for which the award is to be made.

University Teaching Fellowships.—These are assigned for the academic year to the various departments of instruction. The applicant is expected to be a prospective candidate for a Doctoral degree, and to have a Master's degree or equivalent in the general field of his future doctoral study. Each Teaching Fellow receives an annual stipend (on a nine-month basis) of up to \$1,350 plus full tuition for whatever schedule of study or research his fellowship duties permit him to carry.

Stipends vary with the work load of the individual Teaching Fellow. Normally a University Teaching Fellow renders half-time service in classroom or laboratory assignments to the department of instruction directing his doctoral study. Application should be made to the executive officer of the department of instruction concerned.

Graduate Teaching Assistantships.—These are open in various departments of instruction to candidates for the Master's degrees. Each graduate teaching assistant renders a designated unit of service to his major department of instruction, and receives, depending upon his teaching or laboratory assignments, up to \$1,215 on a nine-month basis plus tuition for the program of studies which the duties of his assistantship permit him to carry. Application should be made to the executive officer of the department of instruction concerned.

Special Fellowships.—The following Special Fellowships, supported by endowment, are available. Inquiry concerning them should be addressed to the executive officer of the department concerned.

Robin Miller Research Fellowship: A fellowship in medicine in the amount of \$1,800, established in 1953 by bequests of Mrs. Robin Miller, is offered for the study of cardiovascular diseases.

Thomas Bradford Sanders Fellowships: Fellowships varying in amount from \$900 to \$1,500 plus tuition, established in 1928 by bequest of Miss Addie Sanders in memory of her brother, Thomas Bradford Sanders, are offered in various departments of science.

SCHOLARSHIPS AND PRIZES

Scholarships are awarded for the academic year unless otherwise specified and are credited in equal parts for each semester. Each holder must carry a full schedule of academic work during the period for which the scholarship is awarded. Applicants (except in the case of the Daughters of the American Revolution Scholarship and the Eugene and Agnes E. Meyer scholarships) must have established an academic record in courses at this institution, and should apply on prescribed forms which must be filed in the Office of the Chairman of the Committee on Scholarships not later than April 1 preceding the academic year for which the scholarship is to be awarded. Further information concerning the following scholarships may be obtained from the Chairman of the Committee on Scholarships, The George Washington University, Washington 6, D. C.

Anna Bartsch Scholarship.—This scholarship, in the amount of \$500, established in 1946 by Dr. Anna Bartsch-Dunne, as a memorial to her mother, Anna Bartsch, is available to a woman in the School of Medicine, "of outstanding scholarship, character, and promise, who intends to make the practice of medicine her life profession". The award is made upon the recommendation of the Faculty of the School of Medicine.

Everett Lamont Bradley Scholarship.—This scholarship, in the amount of \$200, established in 1954, by bequest of Alice R. H. Bradley in memory of her son, Everett Lamont Bradley, is available to a student in the School of Medicine.

Emma K. Carr Scholarship.—Six scholarships in the amount of \$400 each and ten of \$100 each, established in 1932 by Emma K. Carr, are available to "young men (of the white race) for undergraduate or post-graduate work, considering character, capacity, and need".

Maria M. Carter Scholarship.—This scholarship in the amount of \$100, established in 1871 by Maria M. Carter, is available to a young man.

Isaac Davis Scholarship.—This scholarship, in the amount of \$80, was established in 1869 by the Honorable Isaac Davis of Massachusetts. Nominations for the scholarship may be made "by the founder or his eldest lineal descendant". In case no such nomination is made, the scholarship is to be awarded by the University.

Allie S. Freed Prize.—This prize of \$40 established in 1957 by Mrs. Allie S. Freed, is awarded annually to a member of the graduating class in the School of Medicine who has demonstrated exceptional proficiency in the field of Preventive Medicine.

Hazelton Scholarship.—This scholarship, in the amount of \$150, established in 1950 by the bequest of Lillie S. Hazelton, is awarded annually "for the use and assistance of needy and worthy students".

Huron W. Lawson Prize.—This prize of \$100 established in 1957 by Mrs. Huron W. Lawson in memory of her husband, Dr. Huron W. Lawson, who was a distinguished member of the Medical Staff of The George Washington University, is awarded annually to a member of the graduating class in the School of Medicine who has demonstrated exceptional proficiency in the field of Obstetrics and Gynecology.

Eugene and Agnes E. Meyer Scholarship.—A scholarship fund in the amount of \$1,500, established in 1952 by the Eugene and Agnes E. Meyer Foundation, is available annually "to assist promising students or applicants in meeting the costs of furthering their education, with preferential consideration to children of persons who are employed in public service including service in the armed forces or the judiciary."

Julius S. Neviasser Prize in Orthopedic Surgery.—This prize of \$100, established in 1950 by Dr. Julius S. Neviasser, is awarded annually to the student of the junior class of the School of Medicine who scores the highest grade in a written examination in Orthopedics.

John Ordronaux Prize.—This prize of \$150 is awarded annually to the member of the graduating class of the School of Medicine who has completed the four year medical course with the highest scholastic standing.

The Zonta Club of Washington, D. C. Scholarship.—This scholarship

ship, in the amount of \$300, offered by the Zonta Club of Washington, D.C., is available to a woman who is a senior or graduate student with special interest in a professional or business career.

Special Research Scholarships, supporting part-time work in the various departments, have been made available to selected medical students through grants by the Lederle Laboratories, the National Foundation for Infantile Paralysis, and the National Institutes of Health.

FINANCIAL AID

Loan Funds

The following loan funds are available to students in the University in accordance with the qualifications placed thereon by the donors. Inquiries should be directed to the Office of the Treasurer.

University Loan Fund.—The Trustees of The George Washington University have made available a fund for short-term loans to students.

Joseph H. Himes Loan Fund.—This fund contributed by Joseph H. Himes is available for loans to students in the School of Medicine.

Kellogg Medical School Loan Fund.—The W. K. Kellogg Foundation in Battle Creek, Michigan, has established a loan fund for students in the School of Medicine.

School of Medicine Loan Fund.—This fund, contributed by medical students, is available for loans to students in the School of Medicine.

Pfizer Medical School Loan Fund.—The Chas. Pfizer & Co., Inc., has established a fund for loans to students in the School of Medicine.

Henry Strong Educational Foundation.—The Henry Strong Educational Foundation, established at Chicago under the will of General Henry Strong, makes available a fund for loans to both men and women students under the age of twenty-five years.

Sutherland Medical School Loan Fund.—This fund, established by Mrs. Rose L. Sutherland, is available for loans to students in the School of Medicine.

Internship

In memory of her mother, Anna Bartsch, Dr. Anna Bartsch Danne established in 1946 a fund which provides \$15 a month to aid in the support of an internship in the University Hospital. This internship, awarded annually, was awarded for the year 1958-59 to Margaret Fealy Oberg.

REGULATIONS

Students in the School of Medicine are subject to, and are expected to familiarize themselves with, the general University regulations, stated in the University Catalogue.

ATTENDANCE

A student is not permitted to attend classes until registration has been completed and fees due have been paid. Regular attendance is required.

GRADES

The following grading system is used *A* (90-100); *B* (80-89); *C* (75-79); *D* (65-74) condition; *E* (below 65) failure; *Inc.*, incomplete, the passing grade in each subject is *C*.

A student conditioned in any subject will not be advanced until such condition is removed and then only by authority of the Faculty.

EXAMINATIONS

Examinations, which may be written, oral, or practical, will be held during and at the end of each semester.

All students in the School of Medicine are required to take Part I and Part II of the National Board Examinations, except that students from those states and foreign countries which do not recognize the National Board may be exempted from Part II by action of the Committee on Scholarship.

GRADUATION

Application for Graduation

Application for a degree should be filed in the Office of the Registrar at the time of registration for the senior year.

Presence at Graduation

A candidate is required to be present at the graduation exercises unless written application for graduation *in absentia* is approved by the Dean.

RIGHT TO DISMISS STUDENTS

The right is reserved by the University to dismiss or exclude any student from the University, or from any class or classes, whenever, in the interest of the student or the University, the University Administration deems it advisable to do so.

THE DEGREE OF DOCTOR OF MEDICINE

Upon the satisfactory completion of the requirements of the School of Medicine, the degree of Doctor of Medicine is conferred.

COMBINED ARTS AND MEDICINE CURRICULUM

In order to be recommended for the degree of Bachelor of Arts, the candidate must complete at least ninety semester hours of prescribed college work (at least thirty hours and one year of residence must be completed in Columbian College, the senior liberal arts college), and the first year of the medical curriculum. Upon satisfactory completion of the fourth year of the medical curriculum the student becomes eligible for the degree of Doctor of Medicine.

REQUIREMENTS FOR THE DEGREE

Every candidate for graduation with the degree of Doctor of Medicine must be at least twenty-one years of age, and free of all indebtedness to the University. He must have completed satisfactorily not less than four academic years of study as a matriculated student in Medicine, completed all required courses, and passed satisfactorily all prescribed examinations.

HONORS

A candidate who has completed the four-year medical course with an average grade of 90 or above, may be recommended for graduation "with distinction."

INTERN AND RESIDENT TRAINING PROGRAM

The George Washington University Hospital offers rotating-type internships as classified by the National Intern Matching Program, Inc. Twenty-seven internships of one year each are offered; fourteen in the Department of Medicine with emphasis on medicine, eleven in the Department of Surgery with emphasis on surgery, and two in the Department of Pathology with emphasis on pathology.

Rotating Internships, Emphasis on Medicine.—Interns will be assigned to six months of general medicine, two months on the surgical service, and one month each on neuro-psychiatry, pediatrics, obstetrics and gynecology, and emergency.

Rotating Internships, Emphasis on Surgery.—Interns will be assigned to the surgical service for nine months, to general medicine for two months, and to obstetrics for one month.

Rotating Internships, Emphasis on Pathology.—Interns will be assigned to the pathology service for six months, to general medicine for two months, to surgery for two months, to pediatrics for one month, and to obstetrics for one month.

Fifty-five approved residencies are offered in anesthesiology, cardiac diseases, internal medicine, neurologic surgery, neurology, obstetrics-gynecology.

ology, pathology, pediatrics, physical medicine, plastic surgery, psychiatry, roentgenology, surgery and thoracic surgery. Residency programs are of from one to four years depending upon the service. Appointments are for one year subject to renewal. In several of the fields there are affiliations with local and government hospitals.

Fellowships of one or two years are available to acceptable candidates in anesthesiology, cardiology, chest diseases, infectious diseases, outpatient service, physical medicine, rheumatic diseases, surgery and thoracic surgery.

For application blanks and further information, address the Medical Director, The George Washington University Hospital, 901 Twenty-third Street NW., Washington 7, D. C.

MEDICAL TECHNOLOGIST COURSE

The course for medical technologists consists of twelve consecutive months of didactic and practical work in all phases of clinical laboratory technique. The course meets the full requirements of the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists. Prerequisite: the Basic Course in Medical Technology offered by the Junior College of The George Washington University, or the equivalent.

Two classes are accepted each year, one entering in September and the other in March. Enrollment in each class is strictly limited so that personal instruction can be given.

Upon satisfactory completion of the course a certificate is awarded and the candidate is eligible for the certifying examination given by the Board of Registry of Medical Technologists.

For application blanks and further information, address the Director of Laboratories, The George Washington University Hospital, Washington 7, D.C.

STUDENT LIFE

HEALTH ADMINISTRATION

The University maintains a health service that is primarily diagnostic in its intent. It also provides first aid in the event of an emergency.

Medical privileges include: (1) the physical examination of all entering students; (2) three visits by the University physician or surgeon, office or residence (District of Columbia) in any one illness, exclusive of a specialist, surgical operation, laboratory, or X-ray examination; (3) hospitalization, including board and nursing in the University Hospital for not more than one week during any twelve-month period—the necessity to be determined by the Director of Health Administration. The duration of hospitalization period (maximum, one week) is also to be determined by the Director of Health Administration.

This medical benefit does not apply to illness or disability incurred previous to the University semester or prior to payment of tuition fees.

The student is allowed, if he so desires, to engage physicians and nurses of his own choice, but when he does so he will be responsible for the fees charged.

Rules: (1) The Director of Health Administration is empowered to limit or deny the medical benefits where, in his discretion, a student has, by his misconduct or breach of the rules of the University, made himself ineligible; (2) the Director of Health Administration has authority to determine the necessity and length of hospitalization; (3) a student who has severed his connection with the University is ineligible for medical benefits.

PHYSICAL EXAMINATIONS

All first-year students are given a comprehensive physical examination upon admission to the School of Medicine. The students are informed of the findings and advised regarding such measures as will tend to help them maintain a high standard of health.

In addition medical students benefit from the complete Tuberculosis Case Finding Program which the School has maintained since 1938-39. Under this program all students receive tuberculin tests, X-ray examinations, and such special attention from chest specialists as is necessary to reduce to a minimum the dangers from tuberculosis. Students are immunized against those diseases for which proven prophylaxis exist.

LIVING ACCOMMODATIONS

The University maintains four residence halls. Meals are served at the Student Union.

Admission to the University does not include a room reservation. A separate application for a room should be made well in advance (for the fall semester by May first, for the spring semester by January first). Forms for application, together with detailed information, may be obtained from the Director of Activities for Women or the Director of Activities for Men.

Information concerning private rooming and boarding facilities near the University, for women students twenty-one years of age or older and for men students, may be obtained at the Housing Office, Lisner Auditorium. The reservation of rooms in private houses must be made by students.

All girls under the age of twenty-one, who are enrolled for twelve or more semester hours of academic work at the University and who are not living with their parents or relatives, may live outside the dormitory only with the permission and approval of the Director of Activities for Women, and upon receipt of written requests from parents. In no case

will permission be granted for such girls to be domiciled outside the dormitories except with persons approved by the Director of Activities for Women.

Women Students.—The Hattie M. Strong Hall provides single rooms at \$40 a month and double rooms at \$35 a month a person.

The Dolly Madison Hall provides double rooms at \$35 a month a person.

Men Students.—Welling Hall provides double rooms for \$30 a month a person.

The John Quincy Adams Hall provides 69 double rooms each with study alcove and bath. Rooms rent for \$37.50 a month a person.

HONOR SOCIETIES

William Beaumont Medical Society.—Medical students showing unusual ability are elected by the active members of this society, which was founded to encourage medical writing and research among medical students.

Howard Kane-A. F. A. King Obstetrical Society.—The fifteen students in the third and fourth year classes who maintain the highest grades in their work in obstetrics are eligible for membership.

Smith-Reed-Russell Society.—Students of the third and fourth years who maintain a scholastic average of 88 per cent are eligible for membership.

Alpha Omega Alpha.—National Honor Medical Society. Members of the Junior and Senior classes meeting the qualifications specified by the constitution of the Society are eligible for election to membership.

RECREATION

The nation's capital provides abundant recreational resources, a large number of which are available at little or no cost. There are numerous art galleries, museums, concert halls, theaters, swimming pools, parks, and places of great historic interest. There are, in addition, the usual commercial recreation facilities found in a large city. Social activities are provided by student organizations of the University, the School of Medicine, and University sponsored programs such as intramural sports, concerts, recitals and dramatic productions. Almost every religious faith is represented in Washington by one or more churches, and much spiritual, educational, social, and recreational activity is conducted by the various church groups. There are many other cultural and educational facilities in Washington to meet almost any possible individual need or preference of a medical student and his family.

RIGHT TO CHANGE RULES

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.

COURSES OF INSTRUCTION

On the following pages of this BULLETIN, are listed the courses of instruction offered by the School of Medicine. The School of Medicine serves other divisions of the University by making available to non-medical students certain undergraduate and graduate courses in the following fields: Anatomy, Bacteriology, Biochemistry, Pathology, Pharmacology, Physical Medicine, and Physiology. The courses listed are subject to some slight change. The University reserves the right to withdraw any course announced.

EXPLANATION OF COURSE NUMBERS AND SYMBOLS

A number in parenthesis after the name of a course, indicates number of semester hours of credit which may be earned by nonmedical students.

First-year courses are numbered from 101 to 200; second-year courses, from 201 to 300; third year courses, from 301 to 400; and fourth-year courses, from 401 to 500.

Courses offered in the School of Medicine for nonmedical students.—Courses numbered from 101-200 are planned for upper-division students in undergraduate curricula. They may be credited toward higher degrees only when registration for graduate credit has been approved at the beginning of the course by the dean responsible for the graduate work and by the officer of instruction, and when the completion of additional work has been certified by the officer of instruction. Courses numbered from 201 to 300 are planned for graduate students.

ANESTHESIOLOGY

- Charles Seymour Coakley, M.D., *Professor of Anesthesiology, Executive Officer*
 Donald Harrison Stubbs, A.M., M.D., *Clinical Professor of Anesthesiology*
 Seymour Alpert, A.B., M.D., *Associate Professor of Anesthesiology*
 Cunningham Ramsey MacCordy, M.D., *Assistant Professor of Anesthesiology*
 Solomon Naphtali Albert, A.B., M.D., *Assistant Clinical Professor of Anesthesiology*
 Paula Reines Kaiser, M.B., Ch.B., M.D., *Associate in Anesthesiology*
 William Eldridge Bageant, M.D., *Clinical Instructor in Anesthesiology*
 Allen Widome, M.D., *Clinical Instructor in Anesthesiology*
 Charles Gruenwald, A.B., M.D., *Clinical Instructor in Anesthesiology*
 Willem deKlerk Kruger, M.B., Ch.B., *Fellow in Anesthesiology*
 Dolores Suanes Tantoco, M.D., *Fellow in Anesthesiology*
 Joella Campbell Pyeatte, B.S., M.D., *Fellow in Anesthesiology*
 Arturo Aguilar, M.D., *Assistant in Anesthesiology*
 Thomas Domann, B.S., M.D., *Assistant in Anesthesiology*
 Kermit Henry Hanson, M.D., *Assistant in Anesthesiology*
 Kamel James Hassan, B.S., M.D., *Assistant in Anesthesiology*
 John Kenna Jennings, Jr., D.D.S., *Assistant in Anesthesiology*
 Sang Ho Jin, M.D., *Assistant in Anesthesiology*
 Yutaka Kato, M.D., *Assistant in Anesthesiology*
 Narisri Maharakhaka, M.D., *Assistant in Anesthesiology*
 Jose Manuel Pariente, M.D., *Assistant in Anesthesiology*
 Ali Ekrem Sirman, M.D., *Assistant in Anesthesiology*
 Felix Suanes Tantoco, D.D.M., *Assistant in Anesthesiology*
 Helene Gilliaert Werner, M.D., *Assistant in Anesthesiology*
 Hildegard Wessel, M.D., *Assistant in Anesthesiology*
 Eusebio Andre Zambrano, M.D., *Assistant in Anesthesiology*

320 *Anesthesiology*

Spring—1 hour a week

The fundamentals of anesthesia are reviewed and correlated with other medical specialties.

The Staff

421-22 *Anesthesia Seminar*

Academic year—1 hour a week

Students attend anesthesia seminars during their surgical clinical clerkships. University Hospital.

The Staff

433-34 *Advanced Anesthesiology*

The Staff

Academic year—as arranged.

Students are rotated through the work of the department for a period of two weeks and assigned to work in the operating rooms and to attend conferences and seminars. For the more advanced students a three-week elective is offered.

BACTERIOLOGY, HYGIENE, AND PREVENTIVE MEDICINE

Leland Wilbur Parr, Ph.D., *Professor Emeritus of Bacteriology in Residence*

Angus MacIvor Griffin, Ph.D., *Professor of Bacteriology*

Herbert Leonard Ley, Jr., M.D., M.P.H., *Professor of Bacteriology
Executive Officer*

Ralph Gregory Beachley, M.D., Dr.P.H., *Adjunct Professor of Public
Health Practice*

Mary Louise Robbins, Ph.D., *Associate Professor of Bacteriology*

William Gray McCarten, M.S., *Assistant Professor of Bacteriology*

Rudolph Hugh, Ph.D., *Assistant Professor of Bacteriology*

William Donald Hann, M.S., *Associate in Bacteriology*

Herbert Donald Hochstein, B.S., *Sanders Teaching Fellow in Bacteriology*

George Bernard Pelleu, Jr., M.S., *Teaching Fellow in Bacteriology*

Lawrence Malcolm Prescott, A.B., *Fellow in Bacteriology*

Henry Douglas Spong, M.S., *Fellow in Bacteriology*

SPECIAL LECTURERS

Chester Wilson Emmons, Ph.D., *Chief Medical Mycology Unit, Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health; Medical Mycology*

Willard Hull Wright, D.V.M., Ph.D., *Chief Laboratory of Tropical Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health; Medical Zoology.*

John Roderick Heller, Jr., B.S., M.D., *Director, National Cancer Institute, National Institutes of Health; Cancer Control*

Robert Carter Cook, *Director, Population Reference Bureau; Editor, Journal of Heredity; Medical Genetics*

Robert Hanna Felix, M.D., M.P.H., *Director, National Institute of Mental Health, National Institutes of Health; Mental Hygiene*

Francis Byron Gordon, Ph.D., M.D., *Head, Virology Division, National Naval Medical Research Institute, National Naval Medical Center; Virology*

Samuel Jacob Ajl, Ph.D., *Assistant Chief, Department of Bacteriology, Communicable Diseases Division, Walter Reed Army Institute of Research, Walter Reed Army Medical Center; Microbiological Chemistry*

Sarah Bishop Brooks, R.N., B.S. in P.H.N., *Director, Division of Public Health Nursing, Arlington County Health Department; Public Health Practice*

Martin Marc Cummings, B.S., M.D., *Chief, Research and Education Service, Department of Medicine and Surgery, Veterans Administration; Medical Bacteriology*

Morris Cecil Leikind, M.S., *Chief, Historical Research Division, Medical Museum, Armed Forces Institute of Pathology; History of Microbiology*

James Lee Goddard, M.D., M.P.H., *Chief, Accident Prevention Program, Division of Special Health Services, Department of Health, Education, and Welfare; Accident Prevention*

101 *Biostatistics (1)*

Griffin

Fall—Sat., 11:00 A.M.

The meaning and use of statistical terms and methods pertinent to the design of experiments and the interpretation of the results obtained in laboratory, clinical, and field trials.

112 *General Bacteriology (4)*

Hugh

Spring—Mon, Wed., and Fri., 9:10 to 12:00 A.M.

For nonmedical students. A study of the fundamentals of bacteriology, including hygienic applications. Methods of cultivation and control of several groups of microorganisms are studied in the laboratory. Prerequisite: any biological laboratory science. Chemistry 11-12. Laboratory fee, \$13.

209 *Medical Microbiology (1-11)*

Ley and Staff

Fall: lecture (4 hours), laboratory (10 hours)—as arranged.

Bacteria, rickettsia, viruses, yeasts, molds, protozoa, and metazoa which relate to the health and diseases of man—cultural study of most important forms; methods of diagnosis by microscopic, cultural, immunologic, and animal reactions; theory and methods of chemotherapy, vaccines, serum, and antibiotics. Open to suitably prepared graduate students; may be elected as a waiver or in part by adding the appropriate letter to the course number, with credit allocated as follows: (a) *Bacteriology*, including rickettsia and viruses—lecture (4), laboratory (3); (b) *Parasitology*, including medical mycology—lecture (4), laboratory (1); (c) *Immunology* (1). May be taken by a limited number of candidates for Master's degrees. Laboratory fee \$4.50 for each semester hour of laboratory work.

210 *Fundamentals of Epidemiology and Public Health (2)*

Ley and Staff

Spring—Mon., 2:00 to 4:00 P.M.

Sources, modes, and implications of infection and injury. Consideration also given the problem of accidents and poisoning methods. Open to third and fourth graduate students. Prerequisite: Bacteriology 112 or 209.

- 219-20 *Advanced Microbiology* (arr.) Hugh and Staff
 Academic year—as arranged.
 Special study of advanced methods and current problems in microbiology for suitably qualified students specializing in microbiology. Prerequisite: Bacteriology 112 or 209, Chemistry 151-52 or the equivalent; permission of the instructor. Laboratory fee, \$4.50 a semester hour.
- 230 *Statistics in Microbiology* (3) Griffin
 Spring—as arranged.
 The application of statistical methods to the problems of microbiology. For graduate students. Prerequisite: entrance or elementary college algebra.
- 232 *Immunological Methods* (3) McCarten
 1958-59 and alternate years: spring—as arranged.
 Preparation and testing of serological materials. Demonstration of basic serological phenomena. For graduate students. Prerequisite: Bacteriology 112 or 209 and permission of the instructor. Laboratory fee, \$11.
- 234 *Virology* (6) Robbins
 Spring—as arranged.
 Study of viruses and rickettsiae. Lectures and laboratory exercises. For graduate students. Prerequisite: Bacteriology 112 or 209 and permission of the instructor. Laboratory fee, \$16.
- 240 *Advanced Epidemiology and Public Health* (3) Part
 Spring—as arranged.
 Conferences, readings, and problems for graduate students dealing with specialized and advanced phases of the topics presented in Bacteriology 210. Prerequisite: Bacteriology 210.
- 249-50 *Introduction to Medical Research* (3-3) The Staff
 Academic year—Sat. 8:00 A.M. to 1:00 P.M.
 Primarily for graduate students. A comprehensive introduction to the major medical research techniques—statistical, physical, chemical, electrical, and radiological—as applied to biological materials in the medical sciences. Laboratory fee, \$7.50 a semester.
- 293-94 *Staff Seminars* (1-1) The Staff
 Academic year—as arranged.
 For graduate students. Bi-weekly throughout the year.
- 295-96 *Research in Bacteriology* (arr.) The Staff
 Academic year—as arranged.
- 297-100 *Thesis* (3-3) The Staff
 401 *Public Health Practice* Beachley and Staff
 Fall—1 hour a week for 5 weeks.
 Study of public health practice at national, state, city, and county levels. Public and private agencies.

BIOCHEMISTRY

Joseph Hiram Roe, Ph.D., *Professor of Biochemistry, Executive Officer*
 Carleton Raymond Treadwell, Ph.D., *Professor of Biochemistry*
 William Robert Carroll, Ph.D., *Professorial Lecturer on Proteins*
 Charles Hunt Fugitt, Ph.D., *Professorial Lecturer on Physical Biochemistry*
 George Gilbert Ashwell, M.S., M.D., *Professorial Lecturer on Enzymes*
 Benjamin Williams Smith, Ph.D., *Associate Professor of Biochemistry*
 George Vartkes Vahouny, Ph.D., *Assistant Professor of Biochemistry*
 John Martyn Bailey, Ph.D., *Assistant Professor of Biochemistry*
 Archie Lee Smith, M.S., *Instructor in Biochemistry*
 Harold William Clark, Jr., Ph.D., *Associate in Biochemistry*
 Ralph Richard Gray, A.B., *Fellow in Biochemistry*
 Stanley Irwin Sherr, M.S., *Sanders Fellow in Biochemistry*
 Robert Marx Mayer, A.B., *Sanders Fellow in Biochemistry*

113-14 *Biochemistry*

Roe and Staff

Academic year—lecture (12 hours), conference (1 hour), laboratory (6 hours)—as arranged

Physiological and clinical chemistry. For medical students

221-22 *Biochemistry* (4-4)

Treadwell

Academic year—Tues. and Thurs., 9:00 to 12:00 A.M. and 1:00 to 2:00 P.M.

A lecture and laboratory course for pre-medical students. Prerequisite: Chemistry 22 and 152. Material fee, \$15 a semester.

224 *Biochemistry of the Enzymes* (1)

Ashwell

Spring—Mon., 5:00 P.M.

Lecture course dealing with the biochemistry of the enzymes and enzyme reactions. Prerequisite: Biochemistry 113 or 221.

225-26 *Biochemical Procedures* (3-3)

B. Smith and Staff

Academic year—as arranged.

A laboratory course. Material fee, \$15 a semester.

227-28 *Biochemistry Seminar* (1-1)

Roe

Academic year—Fri., 4:00 P.M.

The current literature in the field of biochemistry, mainly for graduate students, but open to a limited number of specially qualified medical students.

- 232 *Proteins and Amino Acids* (1) Carroll
 Spring—Wed., 5:00 P.M.
 A lecture course. Prerequisite: Biochemistry 113 or 221.
- 234 *Physical Biochemistry* (1) Fugitt
 Spring—Sat., 9:00 A.M.
 A lecture course. Physical methods as applied to biochemical problems, including macromolecules and radiobiology. Prerequisite: Biochemistry 113 or 221.
- 249-50 *Introduction to Medical Research* (3-3) The Staff
 Academic year—Sat. 8:00 A.M. to 1:00 P.M.
 Primarily for graduate students. A comprehensive introduction to the major medical research techniques—statistical, physical, chemical, electrical, and radiological—as applied to biological materials in the medical sciences. Laboratory fee, \$7.50 a semester.
- 251 *Carbohydrate Metabolism* (1) Roe
 1958-61 and alternate years; Fall—Sat., 9:00 A.M.
 A lecture course. Prerequisite: Biochemistry 114 or 222.
- 261 *Biochemistry of the Lipids* (1) Treadwell
 1959-62 and alternate years; Fall—Sat., 9:00 A.M.
 A lecture course. Prerequisite: Biochemistry 114 or 222.
- 275-90 *Research in Biochemistry* (arr.) Roe, Treadwell
 Academic year—as arranged.
- 229-300 *Thesis* (3-3) Roe, Treadwell

DERMATOLOGY AND SYPHILOLOGY

Harry Ford Anderson, M.D., *Professor of Dermatology and Syphilology, Executive Officer*

George William Creswell, A.B., M.D., *Assistant Clinical Professor of Dermatology and Syphilology*

Hayden Kirby-Smith, B.S., M.D., *Assistant Clinical Professor of Dermatology and Syphilology*

James Quincy Gant, Jr., M.S., M.D., *Assistant Clinical Professor of Dermatology and Syphilology*

Wendell Melvin Willett, A.B., M.D., *Associate in Dermatology and Syphilology*

Reuben Goodman, M.D., *Associate in Dermatology and Syphilology*

Crawford Southwell Brown, A.B., M.D., *Clinical Instructor in Dermatology and Syphilology*

Manuel Landman, B.S., M.D., *Clinical Instructor in Dermatology and Syphilology*

214 *Dermatology and Syphilology*

The Staff

Fall—1 hour a week.

Lectures on diseases of the skin and syphilis.

317-18 *Clinic*

The Staff

Two weeks in rotation as arranged during academic year.

Case demonstrations, diagnosis, and treatment of skin diseases and syphilis. D. C. General Hospital.

407-8 *Clinic*

The Staff

Two hours a week as arranged in rotation during academic year.

Dermatology and syphilology in infants and children. Children's Hospital.

409-10 *Clinic*

The Staff

Two hours a week as arranged in rotation during academic year.

Clinical demonstrations, diseases of the skin. University Hospital.

MEDICINE

Thomas McPherson Brown, A.B., M.D., *Eugene Meyer Professor of Medicine, Executive Officer*

Monroe James Romansky, A.B., M.D., *Professor of Medicine*

Charles Robert Lee Halley, A.B., M.D., *Clinical Professor of Medicine*

Clayton Bernard Ethridge, M.D., *Clinical Professor of Medicine*

Louis Katz Alpert, B.S., M.D., *Clinical Professor of Medicine*

Sol Katz, B.S., M.D., *Professorial Lecturer in Medicine*

Joseph Francis Fazekas, M.D., *Professorial Lecturer in Medicine*

Robert William Berliner, B.S., M.D., *Professorial Lecturer in Medicine*

Henry Field, Jr., B.S., M.D., *Professorial Lecturer in Medicine*

Thomas Hodge McGavack, A.B., M.D., *Professorial Lecturer in Medicine*

John McCallum Evans, A.B., M.D., *Associate Professor of Medicine*

Alvin Edward Parrish, M.D., *Associate Professor of Medicine*

Peter Diacounis Comanduras, B.S., M.D., M.S. in Med., *Associate Clinical Professor of Medicine*

Clarence Richard Hartman, A.B., M.D., *Associate Clinical Professor of Medicine*

John Alton Reed, A.B., M.D., *Assistant Clinical Professor of Medicine*

Theodore Judson Abernethy, B.S., M.D., *Assistant Clinical Professor of Medicine*

William Travis Gibb, A.B., M.D., *Assistant Clinical Professor of Medicine*

Roy Hertz, Ph.D., M.D., *Assistant Clinical Professor of Medicine*

Samuel Ross Taggart, M.D., *Assistant Clinical Professor of Medicine*

Benjamin Manchester, M.D., *Assistant Clinical Professor of Medicine*

Paul H. Holly, M.S., M.D., *Assistant Clinical Professor of Medicine*

James Joseph Teller, A.B., M.D., *Assistant Clinical Professor of Medicine*

Leahwig George Lindsey, M.D., Ph.D., *Assistant Clinical Professor of Medicine*

John Elliot Smith, A.B., M.D., *Assistant Clinical Professor of Medicine*

John Watkins Tress, A.B., M.D., *Assistant Clinical Professor of Medicine*

Andrew Gabriel Prandell, B.S., M.D., *Assistant Clinical Professor of Medicine*

Lawrence Elly Petersen, A.B., M.D., *Assistant Clinical Professor of Medicine*

Ray Ernest Abbott, A.B., M.D., *Assistant Clinical Professor of Medicine*

Helen Brown, M.D., *Assistant Clinical Professor of Medicine*

- Elizabeth Harman Hill, M.D., *Assistant Clinical Professor of Medicine*
 Joseph Edward Rall, M.D., Ph.D., *Assistant Clinical Professor of Medicine*
 Benjamin Hardy Sullivan, Jr., A.B., M.D., *Assistant Clinical Professor of Medicine*
 John Atkinson Owen, Jr., B.S., M.D., *Assistant Clinical Professor of Medicine*
 Maurice Protas, A.B., M.D., *Associate in Medicine*
 John Minor, A.B., M.D., *Associate in Medicine*
 Lawrence Jay Thomas, B.S., M.D., *Associate in Medicine*
 Charles William Ordman, A.B., M.D., *Associate in Medicine*
 Benjamin Calloway Jones, Jr., A.B., M.D., *Associate in Medicine*
 Richard Bernard Castell, A.B., M.D., *Associate in Medicine*
 Myer Harold Stolar, B.S., M.D., *Associate in Medicine*
 Sam Thompson Gibson, B.S., M.D., *Associate in Medicine*
 Walter Lewis Nalls, M.D., *Associate in Medicine*
 Alfred Brigulio, M.D., *Associate in Medicine*
 Ralph Bretney Miller, A.B., M.D., *Associate in Medicine*
 Thomas Stone Sappington, A.B., M.D., *Associate in Medicine*
 Ernest Cotlove, B.S., M.D., *Associate in Medicine*
 Thomas James Kennedy, Jr., B.S., M.D., *Associate in Medicine*
 Jack Orloff, M.D., *Associate in Medicine*
 John Christian Ransmeier, A.B., M.D., *Associate in Medicine*
 Samuel Jacob Nathan Sugar, Phar.G., M.D., *Associate in Medicine*
 Joseph Ney, B.S., M.D., *Associate in Medicine*
 Joseph Beinstein, A.B., M.D., *Associate in Medicine*
 Frank Solomon Bacon, B.S., M.D., *Associate in Medicine*
 Henry Danlop Ecker, B.S., M.D., *Associate in Medicine*
 Jack Jacob Rheingold, A.B., M.D., *Associate in Medicine*
 Joseph Gorski Tamagna, M.D., *Associate in Medicine*
 Bayne Marbury, M.D., *Associate in Medicine*
 Ross, M.D., *Associate in Medicine*
 George Dunbar Chapman, A.B., M.D., C.M., *Associate in Medicine*
 Wilmer Latimer, Jr., M.D., *Associate in Medicine*
 Henry Snyder, A.B., M.D., *Associate in Medicine*
 Charles Wilson Jones, A.B., M.D., *Associate in Medicine*
 George Taylor, M.D., *Associate in Medicine*
 Charles Waters Thompson, M.D., *Associate in Medicine*
 Wallace Solomen Gladson, B.S., M.D., *Associate in Medicine*
 Joseph Mensh, M.D., *Associate in Medicine*
 Rosenbaum, B.S., M.D., *Associate in Medicine*
 Kerlan, B.S., M.D., C.P.H., *Associate in Medicine*
 Anna Patterson Boelar, A.B., M.D., *Associate in Medicine*

Lester Sylvan Blumenthal, A.B., M.D., M.S. in Med., *Associate in Medicine*

Stanley William Kirstein, A.B., M.D., *Associate in Medicine*
 James Francis Ambury, B.S., M.D., *Associate in Medicine*
 Robert Norwood Coale, B.S., M.D., *Associate in Medicine*
 Israel Kessler, M.S., M.D., *Associate in Medicine*
 Francis James Murray, B.S., M.D., *Associate in Medicine*
 Edwin Pearson Parker III, B.S., M.D., *Associate in Medicine*
 Morris Hirsh Rosenberg, A.B., M.D., *Associate in Medicine*
 John William DuChes, M.D., *Associate in Medicine*
 Warren Daniel Brill, B.S., M.D., *Associate in Medicine*
 Marvin Fuchs, B.S., M.D., *Associate in Medicine*
 William Jack Weaver, Jr., A.B., M.D., *Associate in Medicine*
 Ruth Boshwitz Benedict, A.B., M.D., *Associate in Medicine*
 Harold Martin Silver, A.B., M.D., *Associate in Medicine*
 Stewart William Bush, B.S., M.D., *Associate in Medicine*
 James Theodore Burns, M.D., *Associate in Medicine*
 William Otis Bailey, Jr., M.D., *Associate in Medicine*
 Thomas Lees Hartman, A.M., M.D., *Associate in Medicine*
 Boris Rabkin, A.B., M.D., *Associate in Medicine*
 Morton Harold Rose, M.D., *Associate in Medicine*
 Cyril Augustus Schulman, B.S., M.D., *Associate in Medicine*
 Louis Aleck Craig, Jr., A.B., M.D., *Associate in Medicine*
 Abraham Wolffe Danish, A.B., M.D., *Associate in Medicine*
 Milton Gusack, A.B., M.D., *Associate in Medicine*
 Adolph Friedman, A.B., M.D., *Associate in Medicine*
 Alvin Randolph Sweeney, Jr., A.B., M.D., *Associate in Medicine*
 Albert Sioerdsma, Ph.D., M.D., *Associate in Medicine*
 Alvin Seltzer, B.S., M.D., *Associate in Medicine*
 Samuel Dennis Loube, A.B., M.D., *Associate in Medicine*
 Alfred Baer, A.B., M.D., *Associate in Medicine*
 Jack Kleh, A.B., M.D., *Associate in Medicine*
 Herbert Abramson, A.M., M.D., *Associate in Medicine*
 Henry Krause Beye, A.B., M.P.H., M.D., *Associate in Medicine*
 James Hutcheon Pert, A.B., M.D., *Associate in Medicine*
 James Irving Boyd, M.D., M.S., *Lecturer in Medicine*
 William Robert Felts, Jr., B.S., M.D., *Instructor in Medicine*
 George Archibald Kelser, Jr., B.S., M.D., *Instructor in Medicine*
 Charles Edward Law, M.D., *Clinical Instructor in Medicine*
 Emil Herbert Bauersfeld, A.B., M.D., *Clinical Instructor in Medicine*
 Harry Clark Bates, B.S., M.D., *Clinical Instructor in Medicine*
 Jeanne Cecile Bateman, A.B., M.D., *Clinical Instructor in Medicine*
 George Sharpe, A.B., M.D., *Clinical Instructor in Medicine*
 William Lewis, M.D., *Clinical Instructor in Medicine*

- Edward Luke Rea, A.B., M.D., *Clinical Instructor in Medicine*
James Packard Mann, M.D., *Clinical Instructor in Medicine*
Maurice Arthur Sislen, A.B., M.D., *Clinical Instructor in Medicine*
William Holmes Crosby, A.B., M.D., *Clinical Instructor in Medicine*
Joseph Hicks Watson, B.S., M.D., *Clinical Instructor in Medicine*
Conrad Gossels, M.D., *Clinical Instructor in Medicine*
Charles Joseph Savarese, Jr., A.B., M.D., *Clinical Instructor in Medicine*
James Eliot Chapman, M.D., *Clinical Instructor in Medicine*
Bernard Robert Cooperman, A.B., M.D., *Clinical Instructor in Medicine*
Marshall Hannis Jacobson, A.B., M.D., *Clinical Instructor in Medicine*
Gottfried Karl Duschak, M.D., *Clinical Instructor in Medicine*
Norman Hartley Rubenstein, M.D., *Clinical Instructor in Medicine*
Howard Otis Mott, A.B., M.D., *Clinical Instructor in Medicine*
Max Gimble Sherer, M.S., M.D., *Clinical Instructor in Medicine*
Donald Morgan Watkin, A.B., M.D., *Clinical Instructor in Medicine*
Edward Adelson, B.S., M.D., *Clinical Instructor in Medicine*
Gerald John Fisher, A.B., M.D., *Clinical Instructor in Medicine*
William Leete Stone, A.B., M.D., *Clinical Instructor in Medicine*
Jacob Robbins, A.B., M.D., *Clinical Instructor in Medicine*
Bernard Howard Ostrow, A.B., M.D., *Clinical Instructor in Medicine*
James Charles Mandes, A.B., M.D., *Clinical Instructor in Medicine*
Irene I-Lien Hsu, B.S., M.D., *Clinical Instructor in Medicine*
Charles David Cooper, A.B., M.D., *Clinical Instructor in Medicine*
Bertle Nelson, A.B., M.D., *Clinical Instructor in Medicine*
Robert Reid Belton, A.B., M.D., *Clinical Instructor in Medicine*
Robert Lynwood Howard, A.B., M.D., *Clinical Instructor in Medicine*
Walter Kurland, B.S., M.D., *Clinical Instructor in Medicine*
Edward Joseph Leonard, M.D., *Clinical Instructor in Medicine*
Paul Wesley Yost, B.S., M.D., *Clinical Instructor in Medicine*
William Kirkman Billingsley, Jr., A.B., M.D., *Clinical Instructor in Medicine*
Robert Sirkosky Gordon, Jr., A.B., M.D., *Clinical Instructor in Medicine*
Donald Sharp Fredrickson, B.S., M.D., *Clinical Instructor in Medicine*
Sam Chapman Pascoe, A.B., M.D., *Clinical Instructor in Medicine*
Wilfred Russell Ehrmantraut, B.S., M.D., *Clinical Instructor in Medicine*
Jack Crowell, B.S., M.D., *Clinical Instructor in Medicine*
David Stanley Davis, A.B., M.D., *Clinical Instructor in Medicine*
Herschel Elroy Richardson, A.B., M.D., *Clinical Instructor in Medicine*
John Whitson Roark, B.S., M.D., *Clinical Instructor in Medicine*
Jerome Harold Epstein, A.M., M.D., *Clinical Instructor in Medicine*
George Cumming Buchanan, A.B., M.D., *Clinical Instructor in Medicine*
Montague Lane, M.D., M.S., *Clinical Instructor in Medicine*

- Forest Klaire Harris II, B.S., M.D., *Clinical Instructor in Medicine*
 Audrey Connor, A.B., M.D., *Clinical Instructor in Medicine*
 Harold Irwin Passes, M.D., B. Surg., *Clinical Instructor in Medicine*
 Charles William Foulke, A.B., M.D., *Clinical Instructor in Medicine*
 Margaret Katherine McCabe, M.D., *Clinical Instructor in Medicine*
 Harold Heacock Orvis, B.S., M.D., *Clinical Instructor in Medicine*
 Howard Erwin Ticktin, A.B., M.D., *Clinical Instructor in Medicine*
 Cesar Augusto Caceres, B.S., M.D., *Research Fellow in Medicine (Cardiovascular Diseases)*
 Juan Bautista Calatayud, M.D., *Robin Miller Fellow in Medicine (Cardiovascular Diseases)*
 Richard Crosman Fowler, B.S., M.D., *Fellow in Medicine (Arthritis and Metabolic Diseases)*
 Wilfred Ernest Gallinek, A.B., M.D., *Fellow in Medicine (Cardiovascular Diseases)*
 Norman Clifford Kramer, M.S., M.D., *Fellow in Medicine (Cardiovascular Diseases)*
 Paul Gregg Rhodes, B.S., M.D., *Fellow in Medicine (Cardiovascular Diseases)*
 Palma Abraham, M.D., *Assistant in Medicine*
 Solomon Barr, A.B., M.D., *Assistant in Medicine*
 Orville Wright Donnelly, M.S., M.D., *Assistant in Medicine*
 Robert Francis Dyer, A.B., M.D., *Assistant in Medicine*
 George Themistocles Economos, M.D., *Assistant in Medicine*
 Joseph Anthony Ionno, M.D., *Assistant in Medicine*
 Susan Kessler, M.D., *Assistant in Medicine*
 William Radford Smith, M.D., *Assistant in Medicine*
 Josephine von Hippel, B.S., M.D., *Assistant in Medicine*
 Andree Raymonde Jeanne-Marie Thomas, M.D., *Fellow in Medicine (Metabolic Diseases)*
 Ampara Rojas Buenaventura, M.D., *Fellow in Medicine (Hematology)*
 Mary Falorsi Watt, M.D., *Research Fellow in Medicine (Renal Diseases)*
 Moyses Purisch, M.D., *Fellow in Medicine (Cancer Chemotherapy)*

SPECIAL LECTURERS

- Albert David Kistin, A.M., M.D., *Chief of Medicine, Beckley Memorial Hospital, Beckley, West Virginia; Cardiology*
 Walter Kendall Myers, B.S., M.D., *Senior Attending Physician, Washington Hospital Center; Consultant in Internal Medicine, Glenn Dale Hospital and Washington Home for Incurables; Internal Medicine*

106 *Living Anatomy*

The Staff

Spring—1 hour a week

An introduction to physical diagnosis, with special emphasis on topographical anatomy.

236 *Clinical Microscopy*

The Staff

Spring—3 hours a week

Conferences and studies in the clinical application of laboratory examinations of blood, body fluids, exudates, excreta.

242 *Physical Diagnosis*

The Staff

Spring—6 hours a week

Covers not only theoretical but practical application of principles of physical diagnosis as related to examinations of patients.

243-44 *Introduction to Medicine*

The Staff

Academic year—2 hours a week

Lectures covering the principles of internal medicine, laboratory, clinical studies and training in the important and outpatient clinics.

25-26 *Clinical Clerkship*

The Staff

First weeks of advanced third academic year.

Training with two patients under individual instruction designed to develop ability in examination of patients and case taking as well as training in clinical reasoning. H. C. General Hospital.

327 *Clinical Pathological Conference I*

The Staff

Fall—1 hour a week

Conferences are held at the School of Medicine. Case histories are presented and discussed by the students and members of the Staff. Clinical, laboratory and therapy findings are reviewed.

37-41 *Therapeutics*

Staff of Medicine and Pharmacology

Conference I

Academic year—1 hour a week

Conferences designed to emphasize the application of pharmacological knowledge to the problems of clinical medicine. Minnesota Hospital.

42-43 *Medical Conferences*

The Staff

Summer session—1 hour a week

H. C. General Hospital

421-22 Outpatient Clinics**The Staff**

Six weeks as arranged during academic year.

Individual case studies under personal supervision of the Staff. Daily clinics on current medical problems and seminars stressing physiological aspects of diseases. Individual examinations and instruction in medical specialties. University Hospital.

423-24 Clinical Clerkship**The Staff**

Six weeks as arranged during academic year.

University, Mt. Alto, and D. C. General hospitals.

427-28 Clinical Pathological Conferences II**The Staff**

Academic year—1 hour a week.

Continuation of Medicine 327.

429-30 Clinical Pathological Conferences III**The Staff**

Academic year—1 hour a week.

Conferences are held at the University Hospital. Attendance is required of students during their medical clerkships there.

NEUROLOGY AND NEUROLOGICAL SURGERY

James Winston Watts, B.S., M.D., *Professor of Neurological Surgery, Executive Officer*

Harold Stevens, Ph.D., M.D., *Professor of Neurology*

Seymour Solomon Kety, A.B., M.D., *Professorial Lecturer in Neurology*

Hyman David Shapiro, M.D., *Associate Clinical Professor of Neurology*

Robert Henry Groh, B.S., M.D., *Associate Clinical Professor of Neurology*

Jonathan Marshall Williams, M.D., *Assistant Clinical Professor of Neurological Surgery*

James Peter Murphy, B.S., M.D., *Assistant Clinical Professor of Neurological Surgery*

Hugo Victor Rizzoli, A.B., M.D., *Assistant Clinical Professor of Neurological Surgery*

Anatole Stephen Dekaban, M.D., Ph.D., *Assistant Clinical Professor of Neurology*

Paul Chodoff, A.B., M.D., *Assistant Clinical Professor of Neurology*

George Davis Weickhardt, M.D., *Associate in Neurology*

Harvey Ammerman, B.S., M.D., *Associate in Neurological Surgery*

George Joseph Hayes, B.S., M.D., *Associate in Neurological Surgery*

Garrett Michael Swain, M.D., *Clinical Instructor in Neurological Surgery*

Marvin Curtis Korengold, D.D.S., B.S., M.D., *Clinical Instructor in Neurology*

John Thomas Lord, A.B., M.D., C.M., *Clinical Instructor in Neurological Surgery*

Delora Fowler Mott, M.D., *Clinical Instructor in Neurology*

Cosmo Ajmone Marsan, M.D., *Clinical Instructor in Neurology*

Norman Harold Horwitz, A.B., M.D., *Clinical Instructor in Neurological Surgery*

Zack Witten Sanders, A.B., M.D., *Clinical Instructor in Neurology*

Ninos Myrianthopoulos, Ph.D., *Clinical Instructor in Neurology*

Wolfgang Theodor Koos, M.D., *Fellow in Neuropathology*

Virginia Duggins, A.M., M.D., *Assistant in Neurology*

Emmanuele Mannarino, M.D., *Assistant in Neurosurgery*

249 Neurology: Basic

Stevens, Williams

Fall—1 hour a week

Methods used to study the form and function of the nervous system.
Lectures and laboratory demonstrations

- 250 *Neurology* Stevens, Shapiro
 Spring—1 hour a week.
 Introductory lectures on clinical neurology with specimens, lantern slides, and motion pictures.
- 331 *Neurology and Neurological Surgery* Watts, Stevens
 Fall—1 hour a week
 Clinical lectures and demonstrations.
- 333-34 *Neurology and Neurological Surgery, Clinical Clerkship* Stevens, Williams, Ammerman
 In conjunction with Neurology 335-36. Two weeks in rotation as arranged during academic year.
 Instruction in history, physical examination, ordinary clinical procedures. Attendance at neurosurgical operations. Six students in rotation. D. C. General Hospital.
- 335-36 *Neurological Conferences* Stevens and Staff
 Clinicopathologic study of specimens from current necropsies one afternoon a week and clinical conference bi-monthly. Six students in rotation. D. C. General Hospital.
- 431-32 *Neurology and Neurological Surgery Clinic* Shapiro, Rizzoli
 Two hours a week for three weeks in rotation as arranged during academic year.
 Neurological outpatient clinic. Consultation of staff on ambulatory cases, demonstration of diagnostic procedures, disposition of neuro-psychiatric cases, ward rounds. Six students in rotation. University Hospital.
- 433-34 *Clinical Neurology* Groh and Sanders
 Two hours a week for three weeks in rotation as arranged during academic year.
 Neurological inpatient examinations and demonstrations. Six students in rotation. St. Elizabeths Hospital.
- 436 *Neurological Surgery (elective)* The Staff
 Spring—1 hour a week
 Lectures and motion picture demonstration of neurosurgical problems.

OBSTETRICS AND GYNECOLOGY

- John Parks, M.S., M.D., *Professor of Obstetrics and Gynecology*
 Robert Henry Barter, B.S., M.D., *Professor of Obstetrics and Gynecology, Executive Officer*
 Henry Lauran Darner, A.B., M.D., *Clinical Professor of Obstetrics and Gynecology*
 George Nordlinger, A.B., M.D., *Clinical Professor of Obstetrics and Gynecology*
 Samuel Mayer Dodek, A.M., M.D., *Associate Clinical Professor of Obstetrics and Gynecology*
 James Glover Sites, M.D., *Assistant Professor of Obstetrics and Gynecology*
 William Prentiss McKelway, A.B., M.D., *Assistant Professor of Obstetrics and Gynecology*
 Jeremiah Keith Cromer, M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
 James Albert Dusbabek, M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
 Clarence Kendall Fraser, Ph.B., M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
 Barton Winters Richwine, M.D., *Associate in Obstetrics and Gynecology*
 Floyd Sterling Rogers, B.S., M.D., *Associate in Obstetrics and Gynecology*
 Rufus Martin Roll, A.B., M.D., *Associate in Obstetrics and Gynecology*
 Caroline Jackson, A.M., M.D., *Associate in Obstetrics and Gynecology*
 William Thurston Ladv, M.D., *Associate in Obstetrics and Gynecology*
 Jed Williams Pearson, Jr., A.B., M.D., *Associate in Obstetrics and Gynecology*
 Thomas Miles Leonard, Ph.B., M.D., *Associate in Obstetrics and Gynecology*
 Julius Robert Epstein, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Morton Selwyn Kaufman, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Samuel Hazen Shea, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Albert Seymour Bright, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Stanley Sue Martin, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*

- Neel Jack Price, B.S., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Roland Essig Bieren, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Alexander LeSueur Russell, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Thomas Ashton Wilson, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Marvin Peace Footer, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Donald Walters, B.S., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Joseph Marshall Friedman, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Leon McNeely Liverett, B.S., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 William Hurlbert Cooper, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Peter Soyster, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Howard Pettit Treichler, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 James Christopher Walsh, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Theodore Fisher Blackwelder, B.S., M.D., *Assistant in Obstetrics and Gynecology*
 Lee Washington Davis, A.B., M.D., *Assistant in Obstetrics and Gynecology*
 Tracy Kobs, B.S., M.D., *Assistant in Obstetrics and Gynecology*
 Howard Gurr McQuarrie, M.D., *Assistant in Obstetrics and Gynecology*
 Nelson Monroe Tart, B.S., M.D., *Assistant in Obstetrics and Gynecology*
 William Davies Wallace, Jr., B.S., M.D., *Assistant in Obstetrics and Gynecology*

254 *Introduction to Obstetrics and Gynecology*

Dodek, Fraser

Spring—1 hour a week.

Lectures and demonstrations on the development and physiology of the female reproductive system and the management of normal pregnancy.

301-2 *Manikin Demonstrations*

Footer

One hour a week for eight weeks in rotation as arranged during academic year.

The mechanism of labor and various types of operative delivery demonstrated to sections of the junior class. D. C. General Hospital.

337-38 *Obstetrics and Gynecology*

The Staff

Academic year—2 hours a week

Lectures and demonstrations on the principles of obstetrics and gynecology.

351-52 *Clinical Clerkship*

The Staff

Four weeks during academic year as arranged.

Clerkship with patients, including ward rounds, operating room demonstrations, and weekly clinic. D. C. General Hospital.

439-40 *Clinic in Obstetrics and Gynecology* Parks, Barter, Sites

One hour a week for eight weeks in rotation as arranged during academic year

Student presentation and discussion of patient problems. Demonstration of equipment used in obstetric and gynecologic practice.

441-42 *Clinical Obstetrics*

The Staff

Academic year—as arranged.

Students participate in prenatal and postnatal clinic care, observe the course of labor and deliver patients under supervision, observe and participate in the gynecological clinics and operating rooms of the University and D. C. General hospitals, attend bi-weekly departmental conferences and daily ward rounds in the University and D. C. General hospitals.

443-44 *Clinical Gynecology*

The Staff

Eight weeks in rotation as arranged during academic year.

Students observe and participate in the gynecological clinics and operating rooms of the University and D. C. General hospitals.

OPHTHALMOLOGY

Ronald Atmore Cox, A.B., M.D., *Professor of Ophthalmology, Executive Officer*
 Ernest Alfred Watson Sheppard, M.D., C.M., *Clinical Professor of Ophthalmology*
 Richard Wallace Wilkinson, A.B., M.D., M.S. in Med., *Assistant Clinical Professor of Ophthalmology*
 Walter Joseph Romejko, B.S., M.D., *Associate in Ophthalmology*
 William Paxson Chalfant, Jr., M.D., *Associate in Ophthalmology*
 William Joseph Graham Davis, A.B., M.D., *Associate in Ophthalmology*
 Robert Edward duPrey, B.S., M.D., *Associate in Ophthalmology*
 Robert Day, A.B., M.D., *Associate in Ophthalmology*
 Melvin Gustavus Alper, A.B., M.D., *Clinical Instructor in Ophthalmology*
 John Henry Gilligan, M.D., *Clinical Instructor in Ophthalmology*
 John Lodge, A.B., M.D., *Clinical Instructor in Ophthalmology*

352 *Ophthalmology*

The Staff

Spring—one hour a week for sixteen weeks as arranged.
 Lecture course presenting aspects of all the principles of ophthalmology.

447 *Clinic*

The Staff

Fall—as arranged.
 During medical outpatient service, each student is given individual instruction in the ophthalmological aspects of systemic disease. University Hospital

OTOLARYNGOLOGY

James Jerry McFarland, Jr., B.S., M.D., *Associate Clinical Professor of Otolaryngology, Executive Officer*

Catharine Birch, A.B., M.D., *Assistant Clinical Professor of Otolaryngology*

Jack Louis Levine, M.D., *Assistant Clinical Professor of Otolaryngology*

Morris Edward Krucoff, B.S., M.D., *Associate in Otolaryngology*

Willard Beecher Walters, B.S., M.D., *Associate in Otolaryngology*

Russel Smith Page, Jr., A.B., M.D., *Associate in Otolaryngology*

Joseph Aziz Sabri, A.B., M.D., *Associate in Otolaryngology*

William MacLohon Tribble, A.B., M.D., *Clinical Instructor in Otolaryngology*

351 Otolaryngology

The Staff

Spring—1 hour a week for fourteen weeks

Lectures and demonstrations on anatomy, physiology, and diseases of the ear, nose, and throat.

354 Bronchoscopy

The Staff

Spring—1 hour a week for two weeks

A series of lectures on the fundamental principles and the use of instruments, including both the fiberoptic and the plate scope.

355-56 Clinic

The Staff

One and one-half hours a week in rotation as arranged during academic year.

Practical clinical instruction in the diagnosis and treatment of diseases of the ear, nose, and throat. D. C. General Hospital.

PATHOLOGY

Thomas Martin Peery, A.B., M.D., *Professor of Pathology, Executive Officer*
 Daniel Leigh Weiss, A.B., M.D., *Clinical Professor of Pathology*
 Frank Nelson Miller, Jr., B.S., M.D., *Associate Professor of Pathology*
 William Newman, A.B., M.D., *Associate Professor of Pathology*
 William Laverne Marsh, B.S., M.D., *Assistant Professor of Pathology*
 Lois Irene Platt, A.B., M.D., *Associate in Pathology*
 Tej Prakash Bharadwaj, M.D., Ph.D., *Clinical Instructor in Pathology*

SPECIAL STAFF FOR DEMONSTRATIONS

John Stewart Howe, A.B., M.D., *Associate Clinical Professor of Pathology*
 Erving Francis Geever, M.D., Ph.D., *Assistant Clinical Professor of Pathology*
 Raymond Georges Gottschalk, B.S., M.D., *Assistant Clinical Professor of Pathology*
 Richard Emery Palmer, A.B., M.D., *Assistant Clinical Professor of Pathology*
 Lorenz Eugene Zimmerman, A.B., M.D., *Associate in Pathology*
 William Francis Enos, A.B., M.D., *Associate in Pathology*
 Lester Walter Fix, M.D., *Associate in Pathology*
 Charles Barrie Cook, B.S., M.D., *Clinical Instructor in Pathology*
 Frederick William Shillinger, B.S., M.D., *Clinical Instructor in Pathology*
 Charles Phelps Barnett, M.D., *Clinical Instructor in Pathology*
 Jules Bernard Edlow, B.S., M.D., *Assistant in Pathology*
 Jose Antonio Martinez, M.D., *Assistant in Pathology*
 Jose Miguel Mullen, M.D., *Assistant in Pathology*
 Joseph Hiram Roe, Jr., A.M., M.D., *Assistant in Pathology*
 George Erhardt White, A.B., M.D., *Assistant in Pathology*

SPECIAL LECTURERS

Elson Bowman Helwig, B.S., M.D., *Chief, Pathology Division, Armed Forces Institute of Pathology*
 Lent Clifton Johnson, B.S., M.D., *Pathologist, Armed Forces Institute of Pathology*

259-60 Pathology

Peery, Miller

Fall—9 hours a week, spring—3 hours a week.

General pathology of inflammation, degenerations, malformations, and

neoplasms. Special pathology of the organs and some diseases. The laboratory work consists of the gross and microscopic study of diseased tissue. Special emphasis is placed on the interpretation of the various pathologic changes and their correlation with symptoms and physical signs.

261-62 *Necropsy*

The Staff

Academic year—as arranged

Students are required to attend and assist in the performance of necropsies at the University Hospital.

263-64 *Demonstrations in Pathology*

Special Staff

Academic year—1 hour a week

Gross specimens from several hospitals are demonstrated and discussed.

267-68 *Seminars in Pathology*

Special Lecturers

Academic year—as arranged

Advanced lectures are presented as arranged on special topics in pathology.

270 *Forensic Pathology and Medical Jurisprudence*

Miller

Spring—1 hour a week

Forensic pathology, toxicology, chemistry, and physiology. The legal and ethical rights and responsibilities of physicians. Legal problems in medicine.

323-24 *Surgical Pathology I*

Weiss

Academic year—1 hour a week

Weekly conferences are held with the student group assigned to the internal medicine reviewing current surgical specimens.

327 *Clinical Pathological Conferences I*

The Staff

Fall—1 hour a week

Conferences are held at the School of Medicine. Case histories are presented and discussed by the students and members of the Staff. Clinical, laboratory, and necropsy findings are correlated.

427-28 *Clinical Pathological Conferences II*

The Staff

Academic year—1 hour a week

Continuation of Pathology 327.

429-30 *Clinical Pathological Conferences III*

The Staff

Academic year—1 hour a week

Conferences are held at the University Hospital. Attendance is required of students during the medical clerkship there.

492 Surgical Pathology II**Newman**

Spring—1 hour a week.

A systematic study of the gross and microscopic changes in the organs and tissues commonly removed surgically.

493-94 Pathology Clerkship (elective)**The Staff**

Academic year—as arranged.

A limited number of students receive training in surgical pathology and necropsies in the laboratories of the University Hospital.

PEDIATRICS

- Preston Alexander McLendon, B.S., M.D., *Professor of Pediatrics*
 Margaret Mary Nicholson, A.B., M.D., *Clinical Professor of Pediatrics*
 Edward Lewis, M.D., *Clinical Professor of Pediatrics*
 William Staton Anderson, A.B., M.D., *Clinical Professor of Pediatrics*
 Robert Harold Parrott, M.D., *Clinical Professor of Pediatrics*
 Leroy Edward Hoeck, M.D., *Clinical Professor of Pediatrics*
 Joseph Michael LoPresti, B.S., M.D., *Associate Professor of Pediatrics*,
Executive Officer
 John Augustine Washington, B.S., M.D., *Associate Clinical Professor of Pediatrics*
 Reginald Spencer Lourie, B.S., M.D., Med.Sc.D., *Associate Clinical Professor of Pediatric Psychiatry*
 Thomas Elmer Reichelderfer, B.S., M.D., M.P.H., *Associate Clinical Professor of Pediatrics*
 Margaret Frances Gutelius, A.B., M.D., *Assistant Professor of Pediatrics*
 Mabel Harlakenden Grosvenor, M.D., *Assistant Clinical Professor of Pediatrics*
 Aaron Nimetz, A.B., M.D., *Assistant Clinical Professor of Pediatrics*
 George Maksim, M.D., M.S. in Ped., *Assistant Clinical Professor of Pediatrics*
 William Allen Howard, A.B., M.D., *Assistant Clinical Professor of Pediatrics*
 John Howell Peacock, Jr., B.S., M.D., *Associate in Pediatrics*
 Edward Irving Cohen, A.B., M.D., *Associate in Pediatrics*
 Mary Katherine Laurence Sartwell, A.B., M.D., *Associate in Pediatrics*
 John Bertram Coleman, M.D., *Associate in Pediatrics*
 Charles Frederick Stuegler, A.B., M.D., *Associate in Pediatrics*
 Hugh Gambel Clark, A.B., M.D., *Associate in Pediatrics*
 William Recinos, Jr., B.S., M.D., *Associate in Pediatrics*
 Robert Edward Martin, M.D., *Associate in Pediatrics*
 Richard Webb, B.S., M.D., *Associate in Pediatrics*
 William Stark, A.B., M.D., *Associate in Pediatric Psychiatry*
 Harold Rich MacPherson, A.B., M.D., *Associate in Pediatrics*
 Robert Harold Diamond, M.D., *Clinical Instructor in Pediatrics*
 Harold Henry Mitchell, M.D., *Clinical Instructor in Pediatrics*
 Orr Warthen, M.D., *Clinical Instructor in Pediatrics*
 Annabelle Black, B.S., M.D., *Clinical Instructor in Pediatrics*
 Robert Harper Anderson, M.D., *Clinical Instructor in Pediatrics*
 Warren Godfrey Preisser, A.B., M.D., *Clinical Instructor in Pediatrics*

Sanford Leon Leikin, M.D., *Clinical Instructor in Pediatrics*
 Bennett Olshaker, A.B., M.D., *Clinical Instructor in Pediatric Psychiatry*
 Harold Taylor Yates, M.D., *Clinical Instructor in Pediatrics*
 Roger Bergstrom, M.D., *Clinical Instructor of Pediatrics*
 George Joel Cohen, M.D., *Clinical Instructor in Pediatrics*
 Milton Sanford Glatt, A.B., M.D., *Clinical Instructor in Pediatrics*
 Marvin Irwin Mones, M.D., B.S., *Clinical Instructor in Pediatrics*
 Mary Alice Vann Fox, A.B., M.D., *Clinical Instructor in Pediatrics*
 William Robert O'Reilly, B.S., M.D., *Clinical Instructor in Pediatrics*
 John William Stohlman, B.S., M.D., *Clinical Instructor in Pediatrics*
 James Larrabee Hatleberg, A.B., M.D., *Clinical Instructor in Pediatric Psychiatry*
 Salvatore Victor Battista, B.S., M.D., *Assistant in Pediatrics*
 Victor Sebastian Cipolla, B.S., M.D., *Assistant in Pediatrics*
 Seymour Zonald Goldblatt, B.S., M.D., *Assistant in Pediatrics*

SPECIAL LECTURER

Myron Ezra Wegman, A.B., M.D., M.P.H., *Director, Division of Education and Training, Pan American Sanitary Bureau, Regional Office for the Americas of World Health Organization; Pediatrics*

256 *Pediatrics*

McLendon and Staff

Spring—2 hours a week

Lectures on physiology of the newborn, normal behavior, growth and physical development, infant nutrition, diseases of the respiratory system, diseases and systemic diseases of infancy and childhood. Medical School.

357-58 *Clinical Clerkship: General Pediatrics*

LoPresti and Staff

Two weeks as arranged during academic year.

Introduction to General Pediatrics. Emphasis on bedside diagnosis and general medicine including the newborn. Ward rounds. Two students in rotation. D. C. General Hospital.

359-60 *Clinical Clerkship: Contagious Diseases*

LoPresti and Staff

Two weeks as arranged during academic year.

Conferences and bedside discussion on contagious and infectious diseases. Prevention and quarantine measures. Five students in rotation. D. C. General Hospital.

361-62 *Clinical Conferences I*

McLendon and Staff

Academic year—1 hour a week.

Report and presentation and discussion by students of current patient problems. D. C. General Hospital.

363-64 *Ward Rounds*

Nicholson, LoPresti, and Staff

Academic year—as arranged

Bi-weekly ward rounds, with students and Resident Staff. D. C. General Hospital.

365-66 *Psychiatry*

Laurie and Staff

Academic year—as arranged

Lectures on normal behavior and emotional development. Clinical case analysis.

457-58 *Clinical Clerkship*

Anderson and Staff

Six weeks as arranged during academic year

Full time, including assignment to night and twelve admissions. Core studies on ward under direct Resident supervision. Ward rounds with Staff and Residents. Twelve students. Children's Hospital.

459-60 *Outpatient Clinic*

Gutelius and Staff

Academic year—as arranged

Work in Medical and Surgery Clinic including surgery, allergy, X-ray, child welfare, pediatrics, dermatology, neurology, and child guidance. Children's Hospital.

461-62 *Clinical Pathological Conferences*

The Staff

Academic year—at least a week

Clinical and pathological discussion of recent patient history and laboratory data. Children's Hospital.

463-64 *Section Conferences*

The Staff

Academic year—twice a week

Discussion of clinical problems of diagnosis and treatment of current patients. Children's Hospital.

465-66 *Section Conferences*

The Staff

Academic year—at least a week

Section diagnosis pre- and post-operative management. Children's Hospital.

467-68 *Clinical Conferences II*

McLendon and Staff

Academic year—at least a week

Required. Case presentation by students. Staff and student discussion of diagnosis and management. Medical School.

469-70 *Child Guidance and Development*

Laurie

Academic year—as arranged

Clerkship in fourth year including Web Baby Clinic Group and class conferences.

PHARMACOLOGY

Paul Kenneth Smith, Ph.D., *Professor of Pharmacology, Executive Officer*

Harold George Mandel, Ph.D., *Professor of Pharmacology*

Ralph Grafton Smith, M.D., Ph.D., *Clinical Professor of Pharmacology*

Bernard Beryl Brodie, Ph.D., *Professorial Lecturer in Pharmacology*

Clarke Davison, Ph.D., *Associate Professor of Pharmacology*

Peter Bruno Danneberg, M.D., *Assistant Professor of Pharmacology*

Paul Wilhelm Muller, Dr. sc. nat., *Assistant Research Professor of Pharmacology*

Norman Henry Carey, Ph.D., *Assistant Research Professor of Pharmacology*

Donald Bernard Roodyn, Ph.D., *Assistant Research Professor of Pharmacology*

Claudia Sebeste Prickett, Ph.D., *Assistant Research Professor of Pharmacology*

Morton Levitt, B.S. in S.S., B.S. in Phar., *Teaching Fellow in Pharmacology*

Arthur Michaelson, M.S., *Research Fellow in Pharmacology*

Robert Sanford Rozman, M.S., *Teaching Fellow in Pharmacology*

Lillemor Elena Spitzer-Crehore, B.S., *Research Fellow in Pharmacology*

Ernest Frederick Zimmerman, B.S., *Research Fellow in Pharmacology*

SPECIAL LECTURER IN PHARMACOLOGY

William Vincent Crahan Leahy, Ph.D., *Assistant Chief, Radiotope Service, Veterans Administration Hospital, Washington, D.C.*

249-50 *Introduction to Medical Research (3-3)*

Academic year—Sat. 8:00 A.M. to 1:00 P.M.

Primarily for graduate students. A comprehensive introduction to the major medical research techniques—statistical, physical, chemical, cytological, and radiological—as applied to biological materials in the natural sciences. Laboratory fee, \$7.50 a semester.

The Staff

261 *Pharmacology (5)*

Fall—5 hours a week

Lectures and conferences concerning the interaction of drugs and biological systems as a basis for the rational therapy of disease. Open to qualified nonmedical students.

The Staff

262 *Chemotherapy (1)*

Spring—1 hour a week

Continuation of Pharmacology 261

263 *Pharmacology Laboratory* (1)

The Staff

Fall—3 hours a week

Laboratory instruction and demonstrations designed to complement Pharmacology 261. Open to qualified nonmedical students.

267-68 *Pharmacological Research* (arr.)

The Staff

Academic year—as arranged.

Primarily for those properly qualified graduate and medical students seeking careers in pharmacology.

269-70 *Pharmacology Seminar* (1-1)

The Staff

Academic year—2 hours a week

Recent advances in pharmacology. For those interested in pharmacological research. Open to qualified nonmedical students.

279-80 *Special Methods in Research* (arr.)

The Staff

Academic year—as arranged.

A course to familiarize the student with advanced biochemical, microbiological, and physiological methods employed in pharmacological investigations. Open to qualified nonmedical students.

299-300 *Thesis* (3-3)

The Staff

Academic year—as arranged

Required of Master of Arts and Master of Science candidates

339-40 *Therapeutic Conferences I*

Staff of Pharmacology and Medicine

Academic year—1 hour a week.

Conferences designed to emphasize the application of pharmacological principles to the problems of clinical medicine.

PHYSICAL MEDICINE AND REHABILITATION

Charles Samuel Wise, B.S., M.D., *Professor of Physical Medicine and Rehabilitation, Executive Officer*

John Watt, Jr., M.D., *Assistant Clinical Professor of Physical Medicine and Rehabilitation*

Alvin Knudson, B.S., M.D., *Associate in Physical Medicine and Rehabilitation*

Francis Liell Wenger, M.D., *Associate in Physical Medicine and Rehabilitation*

Charles Raymond Peterson, M.D., *Fellow in Physical Medicine and Rehabilitation*

Jessie Elizabeth Fair, M.C.S.P., R.P.T., *Assistant in Physical Medicine and Rehabilitation*

Kyoko Ishiyama, B.S., R.P.T., *Assistant in Physical Medicine and Rehabilitation*

150 *Elements of Physical Medicine*

The Staff

Spring—as arranged

In arrangement with the Anatomy Department, lectures and demonstrations of the various tests and measurements are employed in the evaluation of physical disability.

352 *Advanced Physical Medicine*

The Staff

Spring—one hour a week

Lectures and demonstrations concerning the various techniques, clinical applications of physical medicine and rehabilitation to be integrated with the teaching of the associated medical and surgical specialties.

467-68 *Clinical Studies*

The Staff

Academic year—as arranged

Clinical teaching and demonstration at the University Hospital

485 *Research (arr.)*

The Staff

Fall—as arranged

Open to medical students and qualified nonmedical students.

PHYSIOLOGY

Chester Elwood Leese, Ph.D., *Fry Professor of Physiology*
 Charles Adrian Michael Hogben, M.D., Ph.D., *Professor of Physiology,*
Executive Officer

William Rankin Duryce, Ph.D., *Research Professor of Physiology*
 Erich Heinz, M.D., *Research Professor of Physiology*
 Eugene Marshall Renkin, Ph.D., *Assistant Professor of Physiology*
 Habeeb Bacchus, Ph.D., M.D., *Assistant Clinical Professor of Physi-*
ology

Joseph Frederick Hoffman, Ph.D., *Lecturer in Physiology*
 Gabriel George Nahas, M.D., Ph.D., *Lecturer in Physiology*
 David Platt Rall, M.D., Ph.D., *Lecturer in Physiology*
 Samuel Isay Yamada, Ph.D., *Lecturer in Physiology*
 Charles Arthur Toompas, Ph.D., *Instructor in Physiology*
 Francis DeSales Woolich, B.S., M.D., *Associate in Physiology*
 Magdolna Anne Iranvi, M.D., *Associate in Physiology*
 Saul Winegrad, A.B., M.D., *Associate in Physiology*
 Bernell Elwyn Baldwin, A.B., *Fellow in Physiology*
 Clair Maynard Paine, Ph.D., *Research Fellow in Physiology*

SPECIAL LECTURER

Stanley Jay Sarnoff, A.B., M.D., *Chief, Laboratory of Cardiovascular*
Physiology, National Heart Institute, National Institutes of Health;
Cardiovascular Physiology

115 *Physiology* (3)

Leese, Toompas

Fall—Section A—Tues. and Thurs., 8:45 to 10:00 A.M.; section B—
 Tues. and Thurs., 5:10 to 6:25 P.M.

Lectures for nonmedical students covering the fundamentals of physi-
 ology in its various subdivisions. Prerequisite: one year of general
 science or one semester of a biological science.

117 *Experimental Physiology* (1)

Toompas

Fall—Sat., 9:00 to 12:00 A.M.

Laboratory studies in the fundamentals of physiology for nonmed-
 ical students. Prerequisite: an equivalent registration. Physiology 115
 or the equivalent. Material fee \$15.

120 *Physiology of Endocrine Activity* (2)

The Staff

Spring—Tues. and Thurs., 6:10 P.M.

For nonmedical students. The endocrine glands, regulatory
 growth, and other adaptive mechanisms and long-term physiology.

- ing and affecting endocrine activity. Prerequisite: Physiology 115 or the equivalent.
- 130 *The Psycho-physiology of Personality* (2) Leese
Spring—Tues. and Thurs., 5:10 P.M.
For nonmedical students. Lectures on the genesis and expression of personality, with emphasis on the physiological approach. Prerequisite: Physiology 115 or the equivalent and general psychology.
- 149-50 *Medical Physiology* Hogben and Staff
Fall—4 hours a week; spring—14 hours a week.
Lectures and laboratory work in all divisions of Physiology. This course is designed for medical students.
- 211-12 *Problems in Physiology* (arr.) Leese
Academic year—as arranged.
For nonmedical graduate students. Open to undergraduate students with the approval of the Department. Prerequisite: Physiology 115 and 117, or the equivalent.
- 221-22 *Physiology Seminar* (1-1) Renkin
Academic year—1 hour a week, as arranged.
For nonmedical students undertaking graduate work in physiology. Prerequisite: Physiology 115 and 117, or the equivalent.
- 231-32 *Advanced Physiology* (6-6) Renkin and Staff
Fall—4 hours a week; spring 14 hours a week, as arranged.
For nonmedical graduate students. Lectures and laboratory work in all major areas of physiology. Physiology 112 material fee, \$42.
- 241 *Advanced Physiology of the Cell* (1) Duryee
Fall—1 hour a week, as arranged.
For nonmedical graduate students. Special emphasis on biochemistry and the biochemistry of the cell in relation to organ function.
- 249-50 *Introduction to Medical Research* (3-3) The Staff
Academic year—Sat. 8:00 A.M. to 1:00 P.M.
Primarily for graduate students. A comprehensive introduction to the major medical research techniques—statistical, physiological, chemical, electrical, and radiological—as applied to biological materials in the medical sciences. Laboratory fee, \$7.50 a semester.
- 295-96 *Research* (arr.) The Staff
Academic year—as arranged.
- 299-300 *Thesis* (3-3) The Staff

PSYCHIATRY

- Winfred Overholser, A.B., M.D., Sc.D., L.H.D., *Professor of Psychiatry, Executive Officer*
- Addison, McGuire Duval, M.D., *Clinical Professor of Psychiatry*
- Leon Yochelson, A.B., M.D., *Clinical Professor of Psychiatry*
- Joel Elkes, M.B., Ch.B., M.D., *Clinical Professor of Psychiatry*
- Henry Prather Laughlin, B.S., M.D., *Associate Clinical Professor of Psychiatry*
- Marshall deGraffenried Ruffin, B.S., M.D., *Associate Clinical Professor of Psychiatry*
- Joseph Eugene Rankin, B.S., M.D., *Assistant Professor of Psychiatry*
- Sidney Berman, B.S., M.D., *Assistant Clinical Professor of Psychiatry*
- Morris Kleinerman, B.S., M.D., *Assistant Clinical Professor of Psychiatry*
- Elmer Klein, B.S., M.D., *Assistant Clinical Professor of Psychiatry*
- Anna Coyne Todd, A.B., M.D., *Assistant Clinical Professor of Psychiatry*
- Norman Taub, B.S., M.D., *Assistant Clinical Professor of Psychiatry*
- Harold Corson, M.D., *Assistant Clinical Professor of Psychiatry*
- Irving Schneider, M.D., *Assistant Clinical Professor of Psychiatry*
- Anna Genevieve McEldowney, A.B., M.D., *Associate in Psychiatry*
- Sarah Shostler Tenenblatt, A.B., M.D., *Associate in Psychiatry*
- David Eden, A.B., M.D., *Associate in Psychiatry*
- Robert Milton Greenberg, A.B., M.D., *Associate in Psychiatry*
- Helen Pallister, Ph.D., *Associate in Psychiatry (Psychology)*
- Christopher Theodore Bever, A.B., M.D., *Associate in Psychiatry*
- Warren Charles Johnson, B.S., M.D., *Associate in Psychiatry*
- Richard Allan Rogers, B.S., M.D., *Clinical Instructor in Psychiatry*
- John Anthony Farrell, M.D., *Clinical Instructor in Psychiatry*
- Wilmer Deaver Kehne, A.B., M.D., *Clinical Instructor in Psychiatry*
- Herman Arnold Meyersburg, B.S., M.D., *Clinical Instructor in Psychiatry*
- Samuel Chrabolowski Gordon, M.D., *Clinical Instructor in Psychiatry*
- Harold Bernard Lehrman, A.B., M.D., *Clinical Instructor in Psychiatry*
- Randolph Adams Frank, A.B., M.D., *Clinical Instructor in Psychiatry*
- Maxwell Boverman, A.B., M.D., *Clinical Instructor in Psychiatry*
- Glick Percy, A.B., M.S.W., *Clinical Instructor in Psychiatry (Social Work)*
- Alan McCulloch Drummond, A.B., M.D., *Clinical Instructor in Psychiatry*
- George Warren Sprehn, M.D., *Clinical Instructor in Psychiatry*

Norman Charles Rintz, A.B., M.D., *Clinical Instructor in Psychiatry*
 Leslie Schaffer, M.B., Ch.B., *Clinical Instructor in Psychiatry*
 Joseph Lee Sheridan, A.B., M.D., *Clinical Instructor in Psychiatry*
 Leonard J. Duhl, A.B., M.D., *Clinical Instructor in Psychiatry*
 Noel Asher Schweig, A.B., M.D., *Assistant in Psychiatry*

165 *Dynamics of Personality Development*

Berman

Fall—1 hour a week.

An orientation course in the anatomical, physiological, and psychological growth and development of personality. Consideration of characteristics of structure, function, and development of the person leading to normal behavior as a basis for the study of the pathological. Evaluation of interpersonal relationships.

178 *Psychopathology*

Rankin

Spring—1 hour a week

Manifestations and understanding of various mental mechanisms and abnormal reaction-types, provided by history of development of psychopathology and illustrated with case material.

266 *Psychiatry*

Overholser

Spring—1 hour a week

History, etiology, symptoms, course, and treatment of the major psychoses with emphasis on the dynamics involving the person as a whole.

268 *Demonstration Clinics*

McEldowney, Tenenblatt

Spring—3 hours a week

Presentation of clinical cases of major mental illnesses and primary behavior disturbances, translating with Psychiatry 266. Each student examines patients under supervision. St. Elizabeths and D. C. General hospitals.

272 *Psychosomatic Aspects of General Medicine*

Rutlin

Spring—1 hour a week

Somatic disorders of psychogenic origin. The role of personality in factors in functional and organic disorders.

324 *Psychoneurosis*

Laughlin

Spring—1 hour a week

Etiology, psychopathology, clinical aspects and treatment of various types of psychoneuroses. Medical Conference Room, D. C. General Hospital.

451-52 *Clinical Clerkship*

The Staff

Three weeks divided service as arranged during academic year

Supervised examination, diagnosis and treatment of ambulatory borderline cases in University Hospital and hospitalized cases in St. Elizabeth's Hospital. Conference for discussion of cases. Clinical application of psychiatric principles to general medical practice is stressed. University Hospital, University and Outpatient Psychiatric Clinics and St. Elizabeth's Hospital.

RADIOLOGY

William Woodrow Stanbro, M.D., *Professor of Radiology, Executive Officer*
 Charlotte Patricia Donlan, A.B., M.D., *Associate Clinical Professor of Radiology*
 Solomon Rodney Bersack, B.S., M.D., *Assistant Clinical Professor of Radiology*
 Harry Jay Kicherer, M.D., *Assistant Clinical Professor of Radiology*
 Harry Louis Berman, B.S., M.D., *Assistant Clinical Professor of Radiology*
 John Alexander Isherwood, Ph.B., M.D., *Assistant Clinical Professor of Radiology*
 Elmer Richard King, A.B., M.D., *Assistant Clinical Professor of Radiology*
 Alvin Charles Wyman, A.B., M.D., *Associate in Radiology*
 Herman Litwer, M.D., *Associate in Radiology*
 Scott Winfield Smith, Ph.D., *Associate in Radiology*
 George Tievsky, B.S., M.D., *Clinical Instructor in Radiology*
 Uthai Vincent Wilcox II, M.D., *Clinical Instructor in Radiology*
 Nan Van Wagenen, B.S., M.D., *Clinical Instructor in Radiology*
 Charles Malcolm Weber, M.D., *Clinical Instructor in Radiology*
 Emmett Monroe Cooper, M.D., *Assistant in Radiology*
 Zeki Erim, M.D., *Assistant in Radiology*
 Ryun Ho Kim, M.D., *Assistant in Radiology*
 Mohamad Sadogh Navabpour, M.D., *Assistant in Radiology*
 Chin Woo Park, M.D., *Assistant in Radiology*
 Roger Hall Shannon, A.B., M.D., *Assistant in Radiology*

115-16 *Anatomy*

Academic year—as arranged.
 Correlation of gross and Roentgen anatomy.

The Staff

220 *Principles of Radiology*

Spring—1 hour a week.
 Lectures and discussions.

The Staff

313 *Advanced Radiological Diagnosis*

Fall—as arranged
 Lectures and discussions.

The Staff

421-22 *Clinical Studies*

Students are assigned to the X-ray Department in rotation on a full-time basis for a specific period.

The Staff

SURGERY

- Brian Blades, A.B., M.D., *Professor of Surgery, Executive Officer*
 Arch Lockhart Riddick, B.S., M.D., *Clinical Professor of Surgery*
 John Gordon Lee, A.B., M.D., C.M., Med. Sc.D., *Clinical Professor of Surgery*
 William Stanley McCune, A.B., M.D., *Clinical Professor of Surgery*
 Vincent Michael Iovine, B.S., M.D., *Clinical Professor of Surgery*
 Calvin Trexler Klopp, A.B., M.D., *Warwick Associate Professor of Surgery (Cancer)*
 Herbert Hermann Schoenfeld, M.D., *Associate Clinical Professor of Surgery*
 Alec Horwitz, M.S., M.D., *Associate Clinical Professor of Surgery*
 John Pletch Adams, B.S., M.D., *Associate Clinical Professor of Orthopedic Surgery*
 Howard Clemeth Pierpont, A.B., M.D., *Assistant Professor of Surgery*
 Paul Charles Adkins, A.B., M.D., *Assistant Professor of Surgery*
 Benjamin Franklin Dean, Jr., M.D., M.S., *Assistant Clinical Professor of Surgery*
 Carl Berg, M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Julius Salem Neviasser, A.B., M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Jerome Blaine Harrell, M.D., *Assistant Clinical Professor of Surgery*
 Leonard Theodore Peterson, B.S., M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Gordon Sparks Letterman, B.S., M.D., *Assistant Clinical Professor of Surgery*
 Henry Leon Feffer, A.B., M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 James Richard Thistlethwaite, B.S., M.D., *Assistant Clinical Professor of Surgery*
 William Ross Morris, M.D., *Associate in Surgery*
 Jacob Joseph Weinstein, B.S., Phar.G., M.D., *Associate in Surgery*
 William Carey Meloy, M.D., M.S. in Med., *Associate in Surgery*
 Edward Alexander Catritz, M.D., *Associate in Surgery*
 Karl Hayden Wood, Phar.G., D.D.S., *Associate in Dental Surgery*
 Lucille Harrison, A.B., M.D., *Associate in Surgery*
 Nicholas Patrick Dillon Smyth, M.S., M.B., Ch.B., *Instructor in Surgery*
 Kenneth Douglas Briggs, B.S., M.D., *Clinical Instructor in Surgery*
 Joseph Francis Conlon, D.D.S., *Clinical Instructor in Dental Surgery*
 Deane Case Richtmeyer, A.B., M.D., *Clinical Instructor in Surgery*

- Leon Gerber, M.D., *Clinical Instructor in Surgery*
 Thomas Bradley, A.B., M.D., *Clinical Instructor in Surgery*
 Ernest Alva Gould, B.S., M.D., *Clinical Instructor in Surgery*
 Austin Bertram Rohrbaugh, Jr., A.B., M.D., *Clinical Instructor in Orthopedic Surgery*
 Marvin Havne Kendrick, A.B., M.D., *Clinical Instructor in Surgery*
 Brooks Gideon Brown, M.D., *Clinical Instructor in Surgery*
 John Decator Hoyle, B.S., M.D., *Clinical Instructor in Surgery*
 Robert Roland Smith, B.S., M.D., *Clinical Instructor in Surgery*
 Norman Harry Isaacson, A.B., M.D., *Clinical Instructor in Surgery*
 Charles Stanley White, Jr., B.S., M.D., *Clinical Instructor in Surgery*
 Dennis Parément McCarty, M.D., *Clinical Instructor in Surgery*
 John Mark Keshishian, M.D., *Clinical Instructor in Surgery*
 Maxine Ann Schurter, A.B., M.D., *Clinical Instructor in Surgery*
 Theodore Crandall Alford, A.B., M.D., *Clinical Instructor in Surgery*
 Robert LeRoy Dow, A.B., M.D., *Clinical Instructor in Orthopedic Surgery*
 Louis Robert Perna, A.B., M.D., *Clinical Instructor in Surgery*
 Thomas Mahlon Wright, A.B., M.D., *Clinical Instructor in Surgery*
 Murdock Head, D.D.S., M.D., *Fellow in Surgery*
 Donald Joseph Bauer, M.D., *Assistant in Surgery*
 Jules Cahan, B.S., M.D., *Assistant in Surgery*
 James Davis, M.D., *Assistant in Surgery*
 John Evans, M.S., M.D., *Assistant in Surgery*
 Stephen Bartholt Hiltabiddle, A.B., M.D., *Assistant in Surgery*
 Paul Kennedy, M.D., *Assistant in Surgery*
 Stanley Martin Kison, M.D., *Assistant in Surgery*
 Victor Liszka, M.D., *Assistant in Surgery*
 Barber Clayton Palmer, M.D., *Assistant in Surgery*
 John Alexander Tolley III, A.B., M.D., *Assistant in Surgery*
 Neofytos Theodore Tsangaris, M.D., *Assistant in Surgery*

101-2 *Surgical Anatomy I*

Surgery and Anatomy Staffs

Analysis—1 hour alternate weeks, as arranged
 Close instructing relationship between gross anatomy and clinical surgery—University Hospital
 The Staff

285 *Introduction to Surgery*

Spring—1 hour a week
 Lectures and demonstrations covering the field of general surgery
 The Staff

284 *Surgical Physiology*

Spring—2 hours a week
 A clinical and laboratory course with particular emphasis on applied physiology

- 323-24 *Surgical Pathology I* Weiss
Academic year—1 hour a week.
Weekly conferences are held with the student group assigned to the surgical clerkship, reviewing surgical specimens.
- 373-74 *Clinical Clerkship I* The Staff
Academic year—as arranged.
The student is assigned and required to work up thoroughly the cases for diagnosis and treatment. D. C. General Hospital.
- 375-76 *Outpatient Surgical Clinic* The Staff
Forty hours as arranged during academic year.
Surgical clinic. D. C. General Hospital.
- 377 *Fractures and Orthopedics* The Staff
Fall—1 hour a week.
Lectures covering the field of fractures and orthopedics. D. C. General Hospital.
- 379-80 *Lectures in Surgery* The Staff
Academic year—1 hour a week.
D. C. General Hospital.
- 383-84 *Surgical Clinic* Blades
Academic year—1 hour a week.
Demonstration of various surgical diseases to the entire class. University Hospital.
- 473-74 *Clinical Clerkship II* The Staff
Academic year—in rotation.
Six weeks, University Hospital; three weeks, Mt. Alto Hospital.
- 475-80 *Surgical Staff Conferences* The Staff
Academic year—Wednesday as arranged.
University Hospital.
- 483-84 *Surgical Ward Rounds* Blades
Academic year—1 hour a week.
Demonstration of various surgical diseases to fourth year clerks. University Hospital.
- 491 *Surgical Anatomy II* Horwitz and Staff
Fall—1 hour a week for twelve weeks in rotation.
Lectures for fourth-year clerks. University Hospital.

492 *Surgical Pathology II***Newman**

Spring—1 hour a week.

A systematic study of the gross and microscopic changes in the organs and tissues commonly removed surgically.

UROLOGY

Edward Egner Ferguson, M.D., *Associate Clinical Professor of Urology*
 Leon Richard Culbertson, B.S., M.D., *Associate Clinical Professor of Urology, Executive Officer*
 William Dabney Jarman, B.S., M.D., *Assistant Clinical Professor of Urology*
 Gilbert Ottenberg, A.M., M.D., *Associate in Urology*
 Gordon Rhodes MacDonald, B.S., M.D., *Associate in Urology*
 Frederick Turner Reuter, M.D., *Associate in Urology*
 Herbert DeGrange Wolff, Jr., M.D., *Clinical Instructor in Urology*
 Hamilton Peacock Dorman, B.S., M.D., *Clinical Instructor in Urology*
 Arthur Wilets, A.B., M.D., *Clinical Instructor in Urology*
 Herbert Abraham Goldberg, M.B., Ch.B., *Clinical Instructor in Urology*
 William David Oldham, B.S., M.D., *Clinical Instructor in Urology*

395-96 Clinic

The Staff

Clinical teaching and demonstrations on the care of urological cases with special emphasis on the pre- and post-operative management. Operative clinics and clinical teaching. D. C. General Hospital.

397 Urology

Reuter and Staff

Fall—1 hour a week

Lectures covering the entire field of urology including diagnosis, treatment, and morbid pathology.

495-96 Clinic

Reuter and Staff

Three hours a week, in rotation, as arranged during academic year. Clinical demonstrations, teaching in the Outpatient Department, and unusual X-ray conferences, with special attention given to diagnostic procedures. University Hospital.

THE SCHOOL OF MEDICINE RECORD

1958-59

DEGREES CONFERRED

DOCTOR OF MEDICINE

JUNE 4, 1958

Edward Lynn Alcott (With dissertation) B.S. 1934; Franklin and Marshall College	N J	Katherine Virginia Greene A.B. 1947; Eastern Nazarene College A.M. 1948, Ph.D. 1954, The George Washington University	Va
Henry Alvir B.S. 1931, The George Washington University	Va	Clare Louise Hammond (With dissertation) George Mason University	Md
Robert Alan Apper (With dissertation) B.S. 1931, Franklin and Marshall College	D.C.	George Milton Hunsberger B.S. 1915, University of Maryland Medical Department	Md
Walter A. Arnold III B.S. 1931, Pennsylvania University	Md	Frederick William Hulse M.S. 1941, Eastern Michigan College University of Michigan	Ill
William A. Arnold B.S. 1931, Pennsylvania University	Pa	A.F. 1934, Western Maryland College	N Y
William A. Arnold B.S. 1931, Pennsylvania University	Ohio	John F. Jones, Jr. B.S. 1932, D.D.S. 1934, University of Illinois	Id
William A. Arnold B.S. 1931, Pennsylvania University	Utah	John Andrew Johnson, Jr. B.S. 1934, George City College	Pa
William A. Arnold B.S. 1931, Pennsylvania University	Wash	John Paul Jones, Jr. A.B. 1934, Princeton College	Mich
William A. Arnold B.S. 1931, Pennsylvania University	Calif	Richard Miles Kaufman (With dissertation) A.B. 1934, The George Washington University	Md
William A. Arnold B.S. 1931, Pennsylvania University	Md	Charles Howard Kraft A.B. 1914, Syracuse University	N Y
William A. Arnold B.S. 1931, Pennsylvania University	Calif	Thomas Henry Koene Worcester, Kentucky	Mich
William A. Arnold B.S. 1931, Pennsylvania University	Pa	Paul Keith Lacey A.B. 1932, B.S. 1936, University of South Carolina	Va
William A. Arnold B.S. 1931, Pennsylvania University	Utah	Thomas Wm. Lammert Robert John Lammert	D.C.
William A. Arnold B.S. 1931, Pennsylvania University	Utah	Stevens Francis Leav (With dissertation) A.B. 1931, The George Washington University	Va
William A. Arnold B.S. 1931, Pennsylvania University	Md	John Arthur Lind B.S. 1914, Wesley College	Mass
William A. Arnold B.S. 1931, Pennsylvania University	D.C.	Joseph Wyeland Lindert (With dissertation) B.S. 1934, The George Washington University	Va
William A. Arnold B.S. 1931, Pennsylvania University	Mass	George Linn A.B. 1933, The George Washington University	D.C.
William A. Arnold B.S. 1931, Pennsylvania University	Wash	Ralph J. Linton, Jr. B.S. 1934, University of Idaho	Idaho
William A. Arnold B.S. 1931, Pennsylvania University	N Y	Earl Lloyd Moore A.B. 1934, Columbia University	N Y
William A. Arnold B.S. 1931, Pennsylvania University	Wash	Paul Walter McCowan B.S. 1943, Utah State University of Agriculture and Applied Science	Md
William A. Arnold B.S. 1931, Pennsylvania University	Va	George Francis Miller, Jr. (With dissertation)	Va
William A. Arnold B.S. 1931, Pennsylvania University	Va	George Hiram Mitchell, Jr. B.S. 1934, Washington and Lee University	Md

William Raymond Mize, Jr. A.B. 1954, Washington University	Ill	Robert Habbib Skaff A.B. 1955, West Virginia University	Va
Charles Edward Mullins (With distinction)	Md	Darrell Roger Slette B.S. 1954, University of Wisconsin	Wis
A.B. 1954, Princeton University		David Forsythe Smith George Francis Snell	Calif Conn
Erven Jean Nelson B.S. 1954, Brigham Young University	Utah	(With distinction)	
Margaret Fealy Obear A.B. 1953, The George Washington University	Va	Richard Donald Stansberry A.B. 1950, Oklahoma City University	Okla D.C.
Hardin Elmer Olson A.B. 1953, The George Washington University	Va	Jere Bart Stern B.S. 1954, The George Washington University	Md
Caddie Lewis Parker B.S. 1954, University of Utah	D.C.	Robert Claude Sullivan A.B. 1954, Williams College	Md
Ian Hallam Plenderleith B.S. 1951, Michigan State University of Agriculture and Applied Science	Mich	Wendell Reginald Sylvester A.B. 1951, Columbia University	D.C.
Joseph Jordan Pollock B.S. 1954, Grove City College	Pa	Thomas Tze-Tung Tang A.B. 1954, National Central University, China	
Marvin John Power A.B. 1954, Stanford University	Calif	B.S. 1951, Ph.D. 1954, The George Washington University	Va
James Umde Pollock A.B. 1954, Columbia University	N.Y.	Bahman, Telemann B.S. 1954, Bethany College	Ga
Raymond Julius Radensawer A.B. 1952, Montana State University	Mont	Ford Brownell Tomlinson A.B. 1955, The George Washington University	Me Calif
James Edwin Rasband (With distinction)	Calif	Robert Vaughn Tompson William Julian Towles	
A.B. 1953, Brigham Young University	Ill	A.B. 1954, Occidental College	D.C.
Ernst Robert Ratzer (With distinction)	Md	Charles Hilary Troshinsky (With distinction)	
Catherine Tissot Rav A.B. 1954, Swarthmore College		A.B. 1954, The George Washington University	Calif
Robert Hammond Reed B.S. 1954, The George Washington University	Colo	George Scott Tyler A.B. 1954, University of California at Los Angeles	N.J.
Robert Leonard Rein (With distinction)	N.J.	Morton Bertram Waldman A.B. 1951, Lafayette College	N.Y.
John Howard Renner A.B. 1954, Dartmouth College	Ind	Cheng Chung Wang B.S. 1952, Iowa State College	Pa
David Nelson Robb Ph.B. 1948, University of Chicago	Calif	Harry Edward Wilson, Jr. B.S. 1954, Grove City College	Calif
Manuel W. Roman A.B. 1954, New York University	N.Y.	Theodore Charles Woy Jason Faht-Gong Yee	Calif Calif
Ivan Charles Roman B.S. 1950, University of Pittsburgh	Pa		

STUDENTS REGISTERED IN THE SCHOOL OF MEDICINE*

1958-59

A

Abel, Rashad Ali (III)
A.B. 1956, Lafayette College
Amar, Mohammed (II)
A.B. 1948, The George Washington University
Aron, George Robert (I)
B.S. 1958, College of Idaho
Aron, Richard Hadley, Jr. (III)
A.B. 1956, Connecticut College
Arzouze, Isaac Mortimer (III)
A.B. 1949, Vassar College
Aron, Barton Norman (II)
B.S. 1944, Yale University
Aron, Robert Lee (II)
B.S. 1947, Westminster College
Aronson, Arthur James (II)
Aronson, Kathryn Ann (I)
Aronson, Stuart Wayne (II)
A.B. 1954, University of California
Aronson, Lucille Alberta (III)
B.S. 1957, The George Washington University
Aronson, Larry Deane (II)
A.B. 1958, The George Washington University
Aronson, Herman Rayson (I)
A.B. 1955, Dartmouth College
Aronson, Lee Arthur (I)
A.B. 1955, Pacific Union College
Aronson, Roger Morris (II)
A.B. 1957, Carleton College

Yemen

Iran

Idaho

Oreg

N Y

Conn.

Md

D C

Md

Calif

Pa

D C

N Y

Calif

Minn

B

Abel, Howard Samuel (II)
A.B. 1955, Wesleyan University
Abel, Robert Miller (II)
A.B. 1955, Ben-Jamin (IV)
A.B. 1956, The George Washington University
Abel, Martin, Jr. (II)
A.B. 1955, Haverford College
Abel, James E. (I)
A.B. 1955, Alan Reed (IV)
A.B. 1955, University of California at Los Angeles
Abel, Oliver William (I)
A.B. 1955, College of the Pacific
Abel, Louis Albert (II)
A.B. 1955, Lombard College
Abel, Edward August (IV)
A.B. 1955, Samuel Mather (IV)
A.B. 1955, University of Heidelberg
Abel, Lawrence, Jr. (I)
A.B. 1955, Boston College (I)

Conn.

Md

D C

Ohio

Mass

Calif

Calif

Calif

Ohio

Conn.

D C

Ind

Bertsch, Dale Roger (II)
Blumgart, John Russell, Jr. (IV)
Bolton, Michael Edward (I)
A.B. 1955, LaSalle College
Bolton, Delmar Woodson (II)
Borst, Helen Constance (III)
Borst, Edwin Allen (IV)
B.S. in Pharm. 1957, The George Washington University
Borst, Ronald Jack (IV)
A.B. 1956, The George Washington University
Bowen, Gerald Thomas (III)
Bowen, Vudor Ella (II)
A.B. 1955, The George Washington University
Bradley, Fenwick Philip (I)
Bredt, Edward Hesh (III)
A.B. 1956, Yale University
Bren, Carol Rosenhouse (I)
B.S. 1958, University of Richmond
Brimm, Harry Sledge, Jr. (IV)
A.B. 1952, University of Missouri
Bris, Norman James (III)
A.B. 1955, University of California
Brink, John Richard (III)
A.B. 1955, Carleton College
Brown, Alfred William, Jr. (I)
Burger, George Franklin, Jr. (I)
B.S. in Pharm. 1957, University of Pittsburgh
Buchanan, Keith Elwyn (III)
B.S. 1955, University of Wisconsin
Burgess, Mary Josephine (III)
A.B. 1956, Catholic University of America

Calif

Mass

Del

Calif

Md

Md

D C

Mich

W.Va.

Wash

Ohio

D C

Mo

Calif

Ala

Idaho

Pa

Wis

N Y

N J

Idaho

C

Call, Richard Grant (III)
Call, Robert Camille (III)
B.S. 1955, Rutgers University
Cameron, Hans Bruce (III)
A.B. 1952, University of California at Los Angeles
Campbell, Constance Joan (II)
A.B. 1955, The George Washington University
Cantrell, Robert Wendell (III)
A.B. 1955, The George Washington University
Carlson, Louis Roland (III)
B.S. in Pharm. 1955, Duquesne University
Carroll, William Lyndon, Jr. (I)
A.B. 1957, Stanford University

Idaho

N J

Calif

Va

Mo

Ill

Ariz

*The year of registration in the School of Medicine is indicated in parentheses following the name of the student.

Carter, Robert Lee (III) A.B. 1955, Washington and Jefferson College	W Va.	Dunn, Ronald Edward (II) B.S. 1947, University of Idaho Duxbury, William John (III) B.S. in Pharm. 1952, University of Wisconsin	Iowa Wn
Case, Arnold Lowell (III) A.B. 1956, Yale University	Conn.	E	
Castell, Donald Overton (III) A.B. 1958, The George Washington University	Md	Egeland, Robert E. (III) A.B. 1950, State University of Iowa	Iowa N.Y.
Cetensnak, Robert Joseph (III) B.S. 1956, Catholic University of America	D.C.	Essenbaum, Sidney Leon (I) A.B. 1955, Tulane University	N.Y.
Chambers, Clyde Frank, Jr. (II) Chem. 1955, Ann (I)	Okla. Calif.	Feinstein, Elliot Martin (III) B.S. 1956, Franklin and Marshall College	N.Y.
Chen, Joyce Ann (I) A.B. 1958, University of California	N.J.	Enfeme, Michael Anthony (III) A.B. 1956, Cornell University	Calif.
Clark, Irving Allen (III) A.B. 1947, Harvard University	Pa. Calif.	Evans, Joseph Adolph (III) B.S. 1951, University of California	
Chadwick, Melvin Perry (I) Class. 1956, Peter (II)	Pa.	F	
Cleaver, Robert William (III) A.B. 1956, Duke University	Pa.	Faust, Arland Kenneth (IV) A.B. 1955, University of Kansas	Kansas Hungary Mass
Clother, Walter James Kilburn, Jr. (I) B.S. 1957, Carroll College	Wn.	Fitzekas, Victor (III) Fisch, Edward Joseph (III) B.S. in Pharm. 1955, Massachusetts College of Pharmacy	Calif.
Cohan, Allan Barry (II) A.B. 1957, The George Washington University	D.C.	Fleming, Peter Alan (II) A.B. 1956, San Diego State College	Md N.Y.
Cole, Sherwood Allan (III) A.B. 1956, University of Buffalo	N.Y.	Flood, Harold Leopold (III) Fogel, Michael Roy (I)	Md Pa.
Colmey, Thomas Governor (II) A.B. 1957, Duke University	Ill.	Freedman, Irwin Stanley (IV) A.B. 1955, Haverford College	Pa. N.Y.
Conrad, Justin Lyle (II) A.B. 1957, Northwestern University	N.D.	Fried, John Carl (IV) Fried, Morton George (II) A.B. 1957, New York University	
Coxell, Jack Philip (II) Coxson, Irvin Jack (II)	Ind. Utah	G	
Cozzarelli, James Dumituck (IV) B.S. 1955, St. John's University	N.J.	Gallant, Milton (II) A.B. 1957, Rutgers University	N.J. D.C.
Crabb, Richard Bruce (IV) A.B. 1957, Duke University	Pa.	Ganter, Frank Elwin, Jr. (III) Gatz, Paul S. (II) B.S. 1957, Bethany College	N.Y. Md
Crandall, Peter Lloyd (I) A.B. 1958, San Jose State College	Calif.	Gardner, Allen Stiles (III) B.S. 1956, College of William and Mary	D.C.
Crown, Ronald James (I) B.S. 1958, American University	Md	Garrison, Ray Fillmore (II) A.B. 1957, Johns Hopkins University	Calif.
Cunningham, Edward Earl (III) A.B. 1952, Washington and Jefferson College	Pa.	Gates, Francis Kenneth, Jr. (II) A.B. 1956, Connecticut College	Md
M.S. 1954, Duquesne University		Gerard, Henry Smith, (II) B.S. 1957, The Citadel	Ind.
D		Gibson, Donald Jack (III) A.B. 1956, Susquehanna University	Utah
Dahite, Francis Gene (II) Faint, Charles Dennis, Jr. (III)	Wis. Mo.	Gibson, Delmar Johnson (IV) B.S. 1957, Utah State University of Agriculture and Applied Science	N.J.
Danner, Jack T. (II) B.S. 1957, University of Arizona	Ariz.	Ginsburg, Martin Alan (IV) A.B. 1955, Lehigh University	Calif.
Davajan, Val (III) A.B. 1956, Stanford University	Calif.	Giovannini, Andrew Manuel (II) A.B. 1957, University of California	N.J.
DeGroot, Jerry (III) A.B. 1951, University of Washington	Wash.	Gossman, Leonard Herbert (IV) B.S. 1954, Franklin and Marshall College	Ind.
DeMordaunt, Paul Roger (II) DeQuattro, Vincent Louis (III) B.S. 1955, University of California	Idaho Calif.	Glass, Louis Frank, Jr. (III) A.B. 1957, Reed College	N.Y.
Derro, Robert Arthur (II) A.B. 1957, Harvard University	Mass.	Gordon, Benjamin (IV) B.S. 1956, Yale University	N.Y.
DeVita, Vincent Theodore (II) B.S. 1957, College of William and Mary	N.Y.	Gossman, Julius Morton (III) A.B. 1955, The George Washington University	
Dickerson, Ruth (IV) A.B. 1956, The George Washington University	D.C.		
Dolan, John Albert (II) B.S. 1957, Georgetown University	Md		
Downey, Fred M. Ewen (IV) A.B. 1956, Duke University	D.C.		
Dresscher, John Joseph, Jr. (III) A.B. 1951, Colgate University	Md		

Goodman, Philip (III) B.S. 1956, Union College	N.Y.	Hoffman, Michael George (I) B.S. 1958, University of Arizona	Ariz.
Goodman, Ronald Milton (II)	Wash.	Hovas, William Thomas (II)	Va.
Grandow, Herbert William, Jr. (I) B.S. 1951, D.D.S. 1956, University of Maryland	Va.	A.B. 1953, The George Washington University	
Greene, Thomas Hamlin (II) A.B. 1957, Williams College	Ohio	Hogg, Charles Edgar (III) Hon. Doctor of Laws (IV)	Md. Calif.
Griffin, Charles Narey, Jr. (IV) Hon. Charles Winfield (I)	D.C.	A.B. 1954, University of California	
Griffin, Henry Mayne (I)	Calif.	Hoffman, Ray Thomas (II) B.S. 1956, Bowling Green State University	Ohio
Grayson, Hakaz Marston (IV) A.B. 1952, Boston University M.S. in P.H. 1951, Columbia University	Iran	Hong, Kin Lincoln (II) B.S. 1957, University of Maryland	D.C.
M.S. 1953, The George Washington University		Hughes, Ward Richard (IV) A.B. 1950, The George Washington University	D.C.
Greene, William Gene (III) A.B. 1957, San Diego State College	Calif.	Hurt, Arthur Curtis (II) (I) A.B. 1955, Stanford University	Calif.
Griffin, Vincent Livingston (I)	Md.	Hunter, Richard Hanson (I) A.B. 1958, Duke University	Fla.
Griffin, Carl Richard (II) A.B. 1957, Columbia University	N.J.	Hutton, John Evans, Jr. (I) A.B. 1954, Wesleyan University	N.J.
Griffith, Robert Henry (I) B.S. 1955, Duquesne University	Pa.	I	
Griffin, Ronald Edwin (III) B.S. 1955, Utah State University of Agriculture and Applied Science	N.J.	Iben, Albert Bernhard (IV) I	Wash.
Griffin, Donna Marie (I)	Va.	Iackson, Edward William (IV) Lecturer, James F. Cook (IV)	Calif. Ga.
Griffin, Byron Charles II (I) A.B. 1955, Duke University	D.C.	B.S. 1955, Morehouse College Jackson, Mary Marshall (I) A.B. 1955, Montana State University	Alaska Pa.
H		Jackson, William Connor (II) A.B. 1954, Harvard University	
Hall, Barbara Jean (III) B.S. 1955, University of Miami	Fla.	Jackson, Edward A. (I) A.B. 1958, University of Pennsylvania	N.Y.
Hall, Jean Klaus (IV) A.B. 1954, Cornell University M.S. 1955, University of North Carolina	N.Y.	Jacobs, James Joseph (I) Jennings, John Howard (II) A.B. 1957, Central College	Oreg. Mo.
Hall, Harold Nelson (III) A.B. 1956, St. Olaf College	Minn.	Jones, Marshall Gerald (III) B.S. 1952, College of Puget Sound	Wash.
Hall, Ray Russell (III) A.B. 1957, Marshall College	W.Va.	Johann, James M. Gray (II) A.B. 1957, Central College	Ohio
Hall, Louise Frances (III) A.B. 1956, De La Salle University	Conn.	Johanson, Louis Robert (IV) A.B. 1951, Princeton University	Md.
Hampshire, Alan Curtis (IV) A.B. 1955, Andrews College	R.I.	Johanson, Jack Samuel (III) Jones, Lawrence Van (I)	Utah Va.
Hanson, Jeanne Anne (I) A.B. 1954, College of New Rochelle	N.Y.	K	
Hart, Leland Fennel (I) B.S. 1953, University of Idaho	Idaho	Kashmarck, Leta Alexander (I) Katz, Robert (III)	Pa. Md.
Hart, Eric James (III) B.F.A. 1951, Dreyfus Institute	Md.	Kaufman, Allen Lloyd (I) Kawman, Henry Mayne (II)	N.Y. N.Y.
Hart, Frances Louise (III) A.B. 1956, West Virginia University	W.Va.	Keele, Frank Jay (II) A.B. 1957, Washington and Jefferson College	W.Va.
Hart, Robert Michael (I) Hon. Leroy Michael (III) Hon. Monte Arnold (IV)	N.M. N.J. D.C.	Kelly, Severance Burrage (III) A.B. 1956, Ohio University	W.Va.
Hart, The George Washington University		Kelly, John Edward (IV) Kerr, Robert John (II)	N.Y. Mont.
Hart, Talmage Gordon (I) A.B. 1956, University of Kansas A.M. 1954, Ph.D. 1957, The George Washington University	D.C.	Kerr, Robert John (II) A.B. 1955, University of Missouri	
Hart, Glen Charles (IV) A.B. 1958, The George Washington University	W.Va. D.C.	Kemp, James Fennell (IV) A.B. 1951, University of Utah	Utah
Hart, William Russell (III) Hon. The George Washington University		Kiernan, Paul Bennett (I) A.B. 1958, Massachusetts College	Mass.
Hart, Clayton Allan (II) B.S. 1957, Farmhouse State College	D.C.	Keller, Richard Benjamin, Jr. (IV) A.B. 1956, Duke University	Fla.
Hart, Barton (I) A.B. 1958, Kenyon College	N.Y.	Keller, Robert Samuel (IV) A.E. 1951, Brown University	R.I.
		Kerr, Anthony (IV) A.B. 1953, Williams College	Conn.

Klatsky, Alan Usher (IV)	N.Y.	Matan, Joseph Anthony (I)	M.
A.B. 1955, Yale University		Mathis, Jacob Lenhardt, Jr. (II)	Calif.
Klinenberg, James Robert (IV)	Md.	A.B. 1957, University of California	S.C.
A.B., A.M. 1955, Johns Hopkins University		Mayson, Preston Brooks, Jr. (I)	N.J.
Knapp, Lois Estelle (II)	D.C.	B.S. 1955, U. S. Military Academy	
B.S. 1957, Gustavus Adolphus College		Mazella, Samuel Frank (II)	Mass.
Knorr, Norman John (II)	Md.	A.B. 1957, Cornell University	
Konia, Charles (IV)	N.Y.	McAweeney, William Joseph (IV)	Nr.
A.B. 1955, New York University		A.B. 1955, Providence College	
Kraut, Joseph William (III)	Ill.	McBeath, I. Kent (I)	Pa.
B.S.S. 1954, Georgetown University		B.S. 1957, Idaho State College	
Kuller, Lewis Henry (IV)	N.Y.	McCreedy, James Edward (I)	D.C.
A.B. 1955, Hamilton College		B.S. 1958, Westminster College	
Kundin, Jack Earl (I)	N.J.	McDonald, Duncan Keith (III)	N.J.
Kunkle, Frank Albert (IV)	Ohio	A.B. 1950, Williams College	
Kyne, Peter John (IV)	D.C.	McGowan, Francis Donald (II)	Mass.
B.S. 1955, The George Washington University		A.B. 1957, New York University	
L			
Landaw, Stephen Arthur (IV)	N.J.	McKay, Donald (II)	D.C.
B.S. 1957, University of Wisconsin		A.B. 1955, Harvard University	
Lanham, John Marc (I)	Idaho	Mermel, John Frederick (III)	Ind.
B.S. 1952, College of Idaho		B.S. 1956, Georgetown University	N.J.
LaPiana, Francis Gerald (I)	Calif.	Meymandi-Nejad, Asadullah (I)	
Larson, Paul Frank (IV)	Md.	Micale, Joseph Nicholas (I)	N.Y.
Latimer, Ronald Gordon (II)	Md.	B.S. 1957, Rutgers University	
A.B. 1958, The George Washington University		Miceli, Anthony Matthew (IV)	Pa.
Laudonio, Frank John (IV)	N.Y.	B.S. 1954, Wagner Lutheran College	
A.B. 1955, Columbia University		Mihalakis, Isidore (I)	Md.
Lazaroff, Philip (IV)	D.C.	B.S. 1958, Moravian College	
Leake, Francis Marion (I)	Calif.	A.B. 1956, Hood College	Wash.
A.B. 1958, University of California at Los Angeles		Miller, Alden Hamilton (IV)	
Liebler, Fred Byron (I)	Pa.	B.S. 1956, State College of Washington	
B.S. 1958, University of Pittsburgh		Miller, Jay Howard, Jr. (II)	D.C.
Liebler, George Andrew (I)	Pa.	B.S. 1957, The George Washington University	
B.S. 1958, University of Pittsburgh		Mindel, Eugene David (III)	Md.
London, Dan L. (III)	Utah	B.S. 1956, University of Maryland	
Long, Samuel Eugene (IV)	N.Y.	Mondzac, Allen Mendel (II)	Pa.
B.S. 1955, Wagner Lutheran College		A.B. 1958, The George Washington University	
Loop, Floyd Dorullia (I)	Ind.	Montgomery, Robert Bruce (IV)	Vi.
B.S. 1958, Purdue University		B.S. 1955, University of Maryland	
Locher, William Robert (I)	Calif.	Moore, James Reardon, Jr. (II)	D.C.
B.S. 1957, State College of Washington		B.S. 1957, The George Washington University	
Lowman, Joseph Allen (IV)	Ala.	Morgan, Walter Albert (III)	Mont.
B.S. 1951, University of Alabama		A.B. 1956, The George Washington University	
Lucas, George Lamoyne (II)	Ohio	Morledge, Thomas Edison (II)	Idaho
A.B. 1957, Ohio University		B.S. 1955, University of Arizona	
Lusbie, William McKenzie (I)	N.Y.	Morrell, Robert Henry (I)	Wa.
A.B. 1958, New York University		B.S. 1958, University of Oregon	
Luttmaker, David George (I)	D.C.	Mould, Thomas Mathew (IV)	Th.
A.B. 1958, Princeton University		B.S. 1955, University of Wisconsin	
M			
Maggio, Margaret Mary (III)	N.J.	Mullen, Ronald Eugene (I)	D.C.
Majumdar, Francis Kirkwood (IV)	Pa.	A.B. 1950, Marion College	
A.B. 1958, Antioch College		B.D. 1956, Northern Baptist Theological Seminary	
Majors, Robert Powell, Jr. (II)	N.C.	Mvett, Charles Hammett (III)	
B.S. 1957, Davidson College		A.B. 1955, University of North Carolina	
Manolukas, Paul Angelo (III)	Va.	N	
B.S. 1950, University of Pittsburgh		Nachajski, Peter John (III)	Wye.
M.B.A. 1955, University of Pennsylvania		A.B. 1956, Brown University	Hungary
Marlow, John Lloyd (II)	Idaho	Nelson, Manfred R. (I)	Wa.
B.S. 1957, Brigham Young University		Nemeth, Charles (II)	
Marshall, John Housden Lane (I)	D.C.	Nesbit, Mark Edwin (IV)	N.Y.
B.S. 1956, University of Maryland		B.S. 1951, University of Wisconsin	
Mason, James Kent (II)	Mont.	Nickerson, Richard George (I)	D.C.
Mason, John Keith (I)	Mont.	A.B. 1958, New York University	
B.S. 1954, Rocky Mountain College		Nutter, Donald Owen (II)	
		A.B. 1957, Johns Hopkins University	

O

Oberg, Darrell Keith (I) N J
A.B. 1938, University of Pennsylvania
Oso, Earl Richard (III) Wis.
B.S. 1946, University of Wisconsin
Osm, Harding William (IV) N Y.
B.S. 1947, Kent State University
O'Malley, Donald Francis (I) Pa
M.D. 1946, The George Washington
University
O'Reilly, Richard Rolin (III) Pa.
B.S. 1937, University of Pittsburgh
Oso, Richard E. (I) Idaho
B.S. 1948, Idaho State College
Osterberg, Ronald (IV) D C.
A.B. 1946, The George Washington
University

P

Perez-Gomez, Pedro Mario (IV) Puerto Rico
A.B. 1938, Polytechnic Institute of
Puerto Rico
Pier, Jesse Michael (III) Pa.
B.S. 1937, University of Pittsburgh
Pier, Joseph Charles (I) N J
A.B. 1948, Rutgers University
Pier, Robert Marc (IV) Utah
B.S. 1938, Brigham Young University
Pier, Gerald, Manuel (IV) N Y.
B.S. 1944, College of the City of
New York
Pier, Duane Patricia (IV) Calif.
A.B. 1948, San Francisco State College
Pier, David Noel (I) Minn.
B.S. 1948, Brigham Young University
Pier, Kent Albert (IV) Md.
A.B. 1947, The George Washington
University
Pier, Alfred Karl (I) W Va.
A.B. 1948, Washington and Jefferson
College
Pier, John Douglas (III) Mich.
A.B. 1948, Western Michigan University
Pier, Joseph Vincent (IV) D C.
B.S. 1948, The George Washington
University
Pier, William Lloyd (IV) Md.
A.B. 1948, Williams College
Pier, Robert (III) D C.
B.S. 1948, Tufts University
Pier, Frederick Carl (IV) D C.
A.B. 1948, The George Washington
University
Pier, William Alfred (IV) D C.
A.B. 1948, Ohio Wesleyan University
Pier, William (IV) Calif.
A.M. 1944, Williams College
Pier, Theodore Robert (IV) Calif.
A.B. 1948, B.S. 1948, University of
California
Pier, Willard Samuel, Jr. (III) Mass.
A.B. 1944, Harvard University

R

Rabner, Charles Burton (II) N Y
A.B. 1948, The George Washington
University
Rabner, David Leon (I) Va.
A.B. 1948, The George Washington
University
Rabner, David Leon (II) Pa.
A.B. 1948, Haverford College

Richey, Drake (IV) W.Va.
A.B. 1938, West Virginia University
Ricks, David Kay (I) Idaho
Ridell, Richard Ross (II) Calif.
A.B. 1937, University of Southern
California
Roberts, Richard Treffe (I) Wash.
B.S. 1948, University of Idaho
Roberts, Babbie Lee (I) Va.
Roberts, Ramon Douglas (IV) Idaho
B.S. 1948, Brigham Young University
Robt, William Emanuel, Jr. (III) Md.
Rosenberg, Robert Daniel (II) N Y.
Rowe, Lynn Brockbank (II) Utah
Rozan, Stephen Warren (III) N Y.
A.B. 1937, Bethany College
Rudd, George William (I) D C.
A.B. 1948, College of Wooster
Ruyana, Peter Robert (IV) N Y.
A.B. 1948, New York University
Ruyana, Herman Lloyd (I) Calif.
A.B. 1948, University of California
at Los Angeles

S

Sawyer, Norman Marshall (III) D C.
B.S. 1948, U.S. Coast Guard Academy
Schaefer, Howard (III) Minn.
Schaefer, Howard (III) Pa.
B.S. 1948, Haverford College
Schaefer, Howard (III) Conn.
B.S. 1948, Yale University
Schaefer, Mary Coleman (III) D C.
A.B. 1948, University of Chicago
Schaefer, John (III) N Y.
A.M. 1947, Johns Hopkins University
Schaefer, Gerald Arthur (III) N Y.
B.S. 1948, College of William and
Mary
Schaefer, Gilbert Roland (IV) Calif.
A.B. 1948, Stanford University
Schaefer, Robert Scott (II) N Y.
A.B. 1948, Tufts University
Schaefer, Gerald Eugene (IV) Calif.
B.S. 1948, University of California
Schaefer, Walter Lowell (II) W Va.
A.B. 1948, West Virginia University
Schaefer, James Albert (III) Idaho
B.S. 1947, University of Idaho
Seaman, Kenneth (I) N Y.
A.B. 1948, Franklin and Marshall
College
Seitel, LeRoy Allen (IV) N J
B.S. 1948, Rutgers University
Seitel, Robert Marvin (II) N Y.
A.B. 1948, Ohio State University
Seitel, Lawrence John (I) N Y.
A.B. 1948, Cornell University
Shapiro, Louis Adelle (IV) Md.
B.S. 1948, Rutgers University
Shaw, Seth Thomas, Jr. (III) D C.
A.B. 1948, The George Washington
University
Sheer, Leon Gilbert (II) Md.
A.B. 1948, The George Washington
University
Sheffield, William Hart (II) Calif.
A.B. 1947, Yale University
Sheldon, Arthur (III) D C.
B.S. 1948, College of the City of New
York

Sheldon, Frank Chadwick (I)	N.J.	V	
A.B. 1938, Rutgers University			
Shifrin, Harry David (I)	D.C.	Van Every, David Berl (IV)	Va
B.S. 1938, The George Washington University		A.B. 1935, University of California at Los Angeles	DC
Shook, Marcus Boyd (IV)	Md	Van Fleet, William Vernon (II)	DC
Shreve, Daniel Trundle (III)	Md	A.B. 1937, The George Washington University	
Sigalos, George Louis (IV)	N.Y.	Vu, Hau Nac (II)	Ind
A.B. 1933, Lafayette College			
Silberman, William Charles (II)	Va.		
A.B. 1938, The George Washington University		W	
Silva, Carlos Alberto (III)	Puerto Rico	Wadleigh, John Russell (IV)	DC
B.S. 1936, University of Puerto Rico		A.B. 1936, The George Washington University	
Simons, George Washington (III)	Md	Walkoff, Charles Stanley (IV)	Conn
Skeen, William Waldo (III)	N.C.	Wallman, Arthur Andrew (II)	N.Y.
A.B. 1936, University of North Carolina		B.S. 1937, Queens College	De
Smith, John Joseph (IV)	N.J.	Warren, William Stuart (III)	Conn
A.B. 1933, Seton Hall University		A.B. 1936, Dartmouth College	
Smith, Joseph Eric, Jr. (III)	Md	Watson, Harold Kirk (III)	
A.B. 1936, Washington Missionary College		B.S. 1939, Bates College	N.J.
Smith, Robert Visk (I)	Calif	Weiss, Lowell Martin (I)	Md
Smook, William Henry (III)	Ill	B.S. 1937, Rutgers University	
B.S. in Pharm. 1934, State University of Iowa		Westfall, Florent Franklin (II)	Mass
Sobhani, Hossein Chaharbashi (II)	Iran	White, Elmer Britton (II)	Calif
B.S. 1937, University of Oklahoma		A.B. 1937, Dartmouth College	
Solomon, George Andrew (III)	Pa	Whiting, Edward Gale (I)	Mich
Solomon, Barbara Ann (III)	Calif	A.B. 1938, Stanford University	
A.B. 1933, A.M. 1934, University of California		Whitney, Howard James (I)	
Soumestrem, Adam (I)	Pa	B.S. 1938, Michigan State University of Agriculture and Applied Science	D.C.
Spedell, Edmund Allan (IV)	N.J.	Whitson, Donna Jane (I)	Md
A.B. 1933, Williams College		Whyte, Thomas Russell (I)	
Stein, Ira David (III)	N.J.	B.S. 1938, The George Washington University	W.Va
B.S. 1936, Rutgers University		Wildemann, Mark Frederick (III)	Pa
Sterling, James Andrew (I)	Md	B.S. 1936, University of Maryland	Calif.
A.B. 1938, Williams College		Williams, Melvin Clayton (IV)	
Stevenson, Eugene Chester Seaton (III)	D.C.	Williams, Wilfred LeRoy (IV)	D.C.
B.S. 1933, The George Washington University		B.S. 1933, Whitworth College	
Stewart, Dale Duane (III)	Calif	Wilner, Elliot Charles (I)	Mass
A.B. 1936, Johns Hopkins University		A.B. 1938, Columbia University	
Stodha, Frank Ann (II)	Va	Wing, George Lee (I)	Nebr
A.B. 1938, The George Washington University		A.B. 1938, Harvard University	
Stoutman, Alfredo Timoteo (I)	Panama	Wolcott, George John (I)	Mich
N.Y.		A.B. 1938, Dartmouth College	
A.B. 1937, Williams College		Wood, Warren Arthur, Jr. (II)	
Svenson, Vernon Lynn (I)	Utah	B.S. 1939, Hillsdale College	
T			
Fate, Harry Randolph (II)	N.J.	Yeaman, Max Wilfred (III)	Me
A.B. 1937, University of Virginia		A.B. 1934, University of California	Formosa
Taylor, Eugene Field (IV)	Calif	Yen, Paul Ming-Huang (IV)	N.Y.
Tenney, Richard Luman (II)	N.J.	B.S. 1933, University of Redlands	
A.B. 1937, Duke University		Young, Ira Sanders (IV)	Conn
Thompson, William Frederick (II)	Md	A.B. 1935, Lafayette College	
B.S. 1937, The George Washington University		Young, Lawrence Linden (I)	Ind
Thornton, Valery (II)	D.C.	A.B. 1934, Stanford University	
A.B. 1938, The George Washington University		Young, Stanley Burke (I)	Calif
Tucker, Donald Julius (II)	Va	B.S. 1936, Purdue University	Pa
A.B. 1937, Cornell University		Yuppa, Carmen Giovanni (IV)	
Treeman, Peter A. (II)	Oreg	Yutzy, Carl Vernon (III)	
A.B. 1937, University of Oregon			
U			
Urbanowski, Frank Xavier (II)	N.J.	Zelles, Gary Warren (II)	N.J.
B.S. 1937, Dickinson College		A.B. 1937, Rutgers University	D.C.
		Zimmler, Bertram (III)	
		B.S. 1938, The George Washington University	

SUMMARIES OF REGISTRATION

1958-59

NUMBER OF REGISTRANTS

Class entering September 1958	101
Class entering September 1957	97
Class entering September 1956	100
Class entering September 1955	91
Total	389

GEOGRAPHICAL DISTRIBUTION OF STUDENTS

Alabama	2	New York	42
Arizona	1	North Carolina	2
Arkansas	3	North Dakota	1
California	42	Ohio	9
Connecticut	10	Oklahoma	1
Delaware	2	Oregon	4
District of Columbia	49	Pennsylvania	26
Florida	3	Rhode Island	2
Georgia	1	South Carolina	1
Idaho	14	Utah	8
Illinois	5	Virginia	13
Indiana	4	Washington	7
Iowa	1	West Virginia	1
Maryland	43	Wisconsin	8
Massachusetts	8	Wyoming	1
Michigan	5	Formosa	1
Minnesota	5	Hungary	2
Missouri	4	Iran	5
Montana	4	Lebanon	1
Nebraska	1	Panama	1
Nevada	1	Puerto Rico	1
New Jersey	30	Yemen	1
New Mexico	1		

GRADUATES OF COLLEGES REGISTERED IN THE SCHOOL OF MEDICINE

Alabama, University of	1	Buffalo, University of	1
Albany, University of	1	California, University of	12
Albany College	2	California, University of, at Los Angeles	5
Albany, University of	3	Carroll College	1
Albany College	1	Carleton College	2
Albany University	1	Catholic University of America	1
Albany Green State University	1	Central College	1
Albany, University of	1	Chicago, University of	1
Albany Young University	4	Cincinnati, The	1
Albany University	2	Colgate University	1

Columbia University	5	Oklahoma, University of	1
Cornell University	5	Oregon, University of	1
Dartmouth College	4	Pacific Union College	1
Davidson College	1	Pennsylvania, University of ..	1
Dickinson College	1	Pittsburgh, University of	1
Drake University	1	Pratt Institute	1
Duke University	9	Princeton University	1
Duquesne University	2	Providence College	1
Fairmont State College	1	Puerto Rico, Polytechnic Insti-	1
Franklin and Marshall College ..	3	tute of	1
George Washington University, ..		Puerto Rico, University of ..	1
The	43	Puget Sound, College of	1
Georgetown University	4	Purdue University	1
Gustavus Adolphus College	1	Queens College	1
Hamilton College	1	Redlands, University of	1
Harvard University	6	Reed College	1
Haverford College	5	Richmond, University of	1
Hillsdale College	1	Rocky Mountain College	1
Hood College	1	Rutgers University	1
Idaho, College of	1	St. John's University	1
Idaho State College	2	St. Olaf College	2
Idaho, University of	4	San Diego State College	1
Iowa, State University of	2	San Francisco State College ..	1
Johns Hopkins University	5	San Jose State College	1
Kansas, University of	1	Seton Hall University	1
Kent State University	2	Southern California, University of	1
Kenyon College	2	Stanford University	1
Lafayette College	3	Susquehanna University	1
LaSalle College	1	Tufts College	2
Lehigh University	1	Tulane University	1
Marian College, Indiana	1	Union College	1
Maryland, University of	6	U. S. Coast Guard Academy ..	1
Marshall College	1	U. S. Military Academy	1
Massachusetts College of Phar-		Utah State University of Agri-	2
macy	1	culture and Applied Science ..	1
Merrimack College	1	Utah, University of	1
Miami, University of	1	Vassar College	1
Michigan State University of Agri-		Virginia, University of	2
culture and Applied Science ..	1	Wagner Lutheran College	4
Missouri, University of	2	Washington and Jefferson College	1
Montana State University	1	Washington Missionary College	2
Moravian College	1	Washington, State College of ..	1
Morehouse College	1	Washington, University of	2
New Rochelle, College of	1	Wesleyan University	2
New York, College of the City of	2	Westminster College	1
New York University	6	West Virginia University	1
North Carolina, University of ..	1	Whitworth College	1
Northern Baptist Theological		William and Mary, College of ..	8
Seminary	1	Williams College	7
Northwestern University	1	Wisconsin, University of	1
Oberlin College	1	Worcester, College of	7
Occidental College	4	Yale University	1
Ohio State University	1	Number of College Graduates	301
Ohio University	1	Number of Colleges Repre-	120
Ohio Wesleyan University	1	sented	

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District of Columbia General Hospital, Washington D. C.



The George Washington University Hospital—Clinic Entrance

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CALENDAR

1959-60

Date	Day	Occasion
1959		
SUMMER TERM:		
June 8	Monday	Registration for both sessions
June 9	Tuesday	First session begins
July 4	Saturday	Independence Day. Holiday
July 17	Friday	Last day of classes
July 18-21	Saturday through Tuesday	First session examination period
July 22	Wednesday	Registration for students attending second session only
July 23	Thursday	Second session begins
Sept. 1	Thursday	Last day of classes
Sept. 3-5	Thursday through Saturday	Second session examination period
Sept. 7	Monday	Labor Day. Holiday
FALL SEMESTER:		
Sept. 17 and 18 ..	Thursday and Friday ..	Registration
Sept. 21	Monday	Classes begin
Oct. 17	Saturday	Fall Convocation
Nov. 11	Wednesday	Veterans Day. Holiday
Nov. 26-28	Thursday through Saturday	Thanksgiving recess
Dec. 21-Jan. 2 ..	Monday through Saturday	Christmas recess
1960		
Jan. 4	Monday	Classes resume
Jan. 16	Saturday	Last day for receiving dissertations of candidates for the degree of Doctor of Juridical Science to be conferred in June
Jan. 18-26	Monday through Tuesday	Last day of classes
SPRING SEMESTER:		
Jan. 28 and 29 ..	Thursday and Friday ..	Registration
Feb. 1	Monday	Classes resume for the spring semester
Feb. 22	Monday	Winter Convocation. Holiday
April 15-20	Friday through Wednesday	Easter recess
May 14	Saturday	Last day of classes
May 16-24	Monday through Tuesday	Spring semester examination period
May 29	Sunday	Baccalaureate Sermon
June 1	Wednesday	Commencement

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 Edward Andrew Potts, A.B., LL.B., *Secretary of the Law School*

* For the Academic year 1945-49

THE UNIVERSITY

HISTORY AND ORGANIZATION

The idea of a university in the Capital of the Nation was sponsored by George Washington, who during his public life urged the establishment of such an institution and who in his will left fifty shares of stock in the Potomac (Canal) Company for the endowment of a university to be established in the District of Columbia "to which the youth of fortune and talents from all parts thereof might be sent for the completion of their Education in all the branches of polite literature;—in arts and Sciences,—in acquiring knowledge in the principles of Politics & good Government".

The George Washington University operates under a charter granted by an act of Congress of February 9, 1821, to Columbian College in the District of Columbia. In 1873 the name was changed to "Columbian University" and in 1924 to "The George Washington University".

The University as it is now organized consists of the Junior College, comprising the work of the freshman and sophomore years; Columbian College, the senior college of liberal arts, which offers work leading to the Bachelor's and Master's degrees; the Graduate Council, which offers work leading to the degree of Doctor of Philosophy; the professional schools, which include Medicine, Law, Engineering, Pharmacy, Education, and Government; the College of General Studies; the Division of University Students; the Division of Special Students; the Division of Air Science; and the Summer Sessions.

ACADEMIC STATUS

The George Washington University is accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools. This is important to students who wish to transfer credits from one institution to another.

The University is on the approved list of the American Association of University Women and is a member of the College Entrance Examination Board.

The Law School is a charter member of the Association of American Law Schools and is approved by the Section of Legal Education and Admissions to the Bar of the American Bar Association.

LOCATION

The George Washington University is in downtown Washington, four blocks west of the White House and east of the Potomac River with its extensive parkway. Within a few blocks are the buildings housing the offices of many of the departments of the Government, including the Department of State, the Department of the Treasury, the Department of Justice, the Department of the Interior, the Department of Agriculture, the Department of Commerce, and the Department of Labor. Also readily accessible are the Capitol, the Library of Congress, the National Archives, the Supreme Court, and other federal courts.

THE LAW SCHOOL

THE LAW SCHOOL

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GENERAL INFORMATION

LOCATION IN THE NATION'S CAPITAL

The George Washington University Law School, now in its 94th year, is the oldest law school in the District of Columbia. The School took part as a charter member in 1900 in the organization of the Association of American Law Schools and it has been an active member of the Association since that time. It is approved by the Section of Legal Education and Admissions to the Bar of the American Bar Association.

National University, which has had an important place in legal education in the District of Columbia since 1869, was merged into The George Washington University in August 1954.

Of special significance is the location of the Law School in the Nation's Capital, the focal point of the law in action, both American and international. The work of the School goes on in this environment, presenting a unique opportunity for observation and study of federal agencies—judicial, legislative, and administrative. Readily accessible are the Supreme Court of the United States, the federal trial and appellate courts of the District of Columbia, and, in addition, federal courts of special jurisdiction, such as the United States Court of Claims, the United States Court of Customs and Patent Appeals, and the Tax Court of the

United States. Current federal legislation can be studied as it is considered by Congressional committees and as it comes up for debate on the floors of the House of Representatives and the Senate. It is with respect to the federal administrative agencies that the students here in Washington have matchless opportunities for study and observation. They can attend informal and formal hearings of these agencies and can obtain from the docket sections complete records of administrative adjudication in specific cases. Illustrative of such federal agencies are the Interstate Commerce Commission and the Civil Aeronautics Board in the field of transportation; the Federal Trade Commission in the field of trade regulation; the Securities and Exchange Commission in the field of security issues and corporate finance; the National Labor Relations Board in the field of labor-management relations; the United States Patent Office in the field of patent law; the Federal Power Commission in the field of water, natural gas, and electric power; and the Federal Communications Commission in the field of radio and television.

Supplementing these environmental advantages of law in action are the exceptional research library collections in the Library of Congress, in the various departments of the Federal Government, and in the libraries of the headquarters of national and international organizations located in Washington. The notable library of the Carnegie Foundation for International Peace has been acquired by The George Washington University for use of research students in international and comparative law. Fields with respect to which Washington has come to be called "The Capital of the World".

The years of residence at law school are years of participation in the life of the community, which in the case of the George Washington University Law School, is the government of the United States by law. As a consequence, the study of law takes on added meaning, whether the goal be government service or practice, general or specialized.

OBJECTIVES

The primary purpose of the Law School is to prepare men and women to meet the needs of society in the many fields of law, public and private. These needs call not only for technical skill but also for responsible leadership in the development of the law and the administration of justice. In fulfilling these responsibilities the Law School offers: (1) a program of study in preparation for the practice of law; (2) programs of study and research on the graduate level for foreign as well as for American students; (3) a continuing legal education program for members of the bar; (4) institutes and forums on current topics in domestic and foreign law; (5) the publication of a law journal containing the results of re-

search in public law; and (6) the encouragement of student professional co-curricular activities.

PROGRAMS OF STUDY

Traditionally the Law School has been national in the geographic distribution of its students. At the present time, men and women holding baccalaureate degrees from more than three hundred colleges and universities come from the forty-eight states, the territories, and several foreign countries to comprise the student body. As a consequence the programs of study leading to the degrees of Bachelor of Laws and Juris Doctor have been planned to provide instruction and training for the practice of law wherever the Anglo-American legal system obtains.

Graduate work leading to the degrees of Master of Laws and Doctor of Juridical Science is offered for those desiring further study and research in specialized fields of law.

Provision is made for advanced study by members of the bar who do not desire to register as candidates for degrees. Lawyers may take courses for this purpose either as unclassified graduate students or as continuing legal education students.

Graduate work is offered also to meet the needs of lawyers who come from countries whose legal systems are not based on the English law. There are two programs of study, one leading to the degree of Master of Comparative Law for lawyers planning to return to their own countries, and the other leading to the degree of Master of Comparative Law (American Practice) for lawyers planning to remain in this country for the practice of law.

ORGANIZATION OF THE CURRICULUM

The curriculum is organized so that students may enter the Law School at the beginning of the fall or spring semester of the academic year, or at the beginning of the summer term. (For summer term information, see pages 37-38.)

MORNING AND EVENING DIVISIONS

Morning classes, other than Trial Practice Court, meet for fifty-minute periods between 9:10 A.M. and 1:00 P.M., Monday through Friday; Trial Practice Court meets for a two-hour period from 9:30 to 11:30 A.M. on Saturday.

Evening classes meet for two fifty-minute periods from 5:50 to 7:40 P.M., Monday through Friday. A four-credit course, e.g., Torts, meets two evenings a week; a two-credit course, e.g., Personal Property, meets

one evening a week. The evening division conforms to the standards of the morning division and has the same teaching staff.

THE LIBRARY

The Law Library of 52,700 volumes contains the official reports of the decisions of the courts of last resort of all states prior to the National Reporter System, and of some states complete to date; the National Reporter System, complete; the reports of the United States Supreme Court and lower federal courts, and the reports of federal administrative agencies; Shepard's Citations for the units of the Reporter System; the English Reports, Full Reprint; the English Law Reports; the Times Law Reports; the Dominion Law Reports; the United States statutes and codes; complete sets of statutes of all the states; the English statutes; the principal English and American digests and encyclopedias; collections of special reports and annotated cases; United Nations documents; leading textbooks and treatises; and practically complete sets of about 150 legal periodicals. A section of the library, consisting of books acquired from National University, is known as the National University Law Collection.

The international law collection, formerly the library of the Carnegie Endowment for International Peace, is available to law students.

The Library, which is on the fourth floor of Stockton Hall, is open from 9:00 A.M. to 10:00 P.M., Monday through Friday; from 9:00 A.M. to 5:00 P.M. on Saturday; and from 2:00 to 6:00 P.M. on Sunday. Books and other materials do not circulate and must be used in the library.

THE LAW REVIEW

The George Washington Law Review, published by the University, is edited and managed by students of the Law School under the supervision of faculty advisers. It is devoted exclusively to state and federal public law. The location of the University in the National Capital, where the primary sources of federal public law may be observed in operation, affords an unexcelled opportunity for specialization in this field.

The *Review* organization includes a faculty editor-in-chief, an associate faculty editor, a faculty board of advisory editors, a board of departmental advisory editors, and a board of student editors. The student editors are chosen each year on the basis of scholarship.

THE STUDENT BAR ASSOCIATION

Every student in the Law School is a member of the Student Bar Association, which is organized to enable students to become better acquainted with problems of the profession, to foster professional ideals, and to

bring about closer contact with members of the profession engaged in active practice of the law.

The work of the Student Bar Association is carried on by various committees and by group and general meetings of a professional and social nature. From time to time lectures are given by outstanding authorities on legal and professional problems.

An important activity is the Van Vleck Case Club Competition, which provides an opportunity for training in appellate advocacy. First and second year students participate as contestants before courts composed of members of the Faculty and the local bar. Senior law students of the Case Club also sit as judges. The final argument is held before a court composed of distinguished federal judges.

ORDER OF THE COIF

The Order of the Coif, a national honor society with chapters in over forty law schools, aims "to foster a spirit of careful study and to mark in a fitting manner those who have attained a high grade of scholarship." The George Washington University Chapter was established in 1926. Members are elected each year from the highest-ranking 10 per cent of the graduating class of the Law School.

ADMISSION

APPLICATION FOR ADMISSION

The Law School, as other colleges, schools, and divisions of the University, is coeducational.

An applicant for admission must obtain from the Office of the Director of Admissions of the University an application blank which he must fill out completely and return with the application fee of \$10, for degree candidates; \$5, for non degree candidates.

Two recent photographs must accompany the blank.

To insure prompt action, applications should be filed not later than July 1 for the fall semester, January 1 for the spring semester, and May 1 for the Summer Sessions.

A legal aptitude test is required for the admission of candidates for the degree of Bachelor of Laws. Information regarding the taking of such test may be obtained from the Dean of the Law School or from the Educational Testing Service, 20 Nassau Street, Princeton, New Jersey, which administers the Law School Admission Test at various centers of the United States four times a year. It is not necessary that formal application for admission to the Law School be made prior to taking the aptitude test.

Requirements concerning records of higher institutions previously

attended are set forth on the sheet attached to the application blank.

Attendance at classes is limited to students registered for credit and continuing legal education students. "Auditing" classes is not permitted.

REQUIREMENTS FOR ADMISSION

For the Degrees of Bachelor of Laws and Juris Doctor

Bachelor of Laws.—A Bachelor of Arts or equivalent degree awarded upon completion of a four-year course in an approved college or university is required. The baccalaureate record must be of satisfactory quality and must include an acceptable distribution of courses. Eligibility is evaluated on the basis of personal and scholastic records, supplemented by the result on the legal aptitude test. An applicant will not be admitted who has been in attendance at another law school and who is ineligible to return to that school in good standing. From the applicants, a selection will be made by the Committee on Admissions.

Juris Doctor.—A student does not register as a candidate for this degree until last year in the Law School. For details, see pages 32-33.

ADVANCED STANDING

Advanced standing toward the degree of Bachelor of Laws will be granted only for work successfully completed in other law schools which are members of the Association of American Law Schools. However, credits will not be recognized in excess of those which might be obtained in a similar period in this Law School.

Advanced standing will not be granted for law work already counted toward the Bachelor of Arts or other pre-legal degree.

Advanced standing will not be granted toward meeting the requirements for the degrees of Juris Doctor or Master of Laws.

For the Graduate Degrees

Candidates for graduate degrees must be accepted by the Committee on Graduate Studies.

Master of Laws.*—A Bachelor of Arts or equivalent degree from an approved college or university and a Bachelor of Laws or equivalent degree from a member school of the Association of American Law Schools are required. Candidates for admission must have attained a *B* average on all work done for the Bachelor of Laws degree, except that, at the discretion of the Committee on Graduate Studies, applicants other-

*All of the work necessary for graduation from an approved college or university completed prior to entry into military service may be accepted as satisfying the admission requirements for pre-legal work, provided the applicant completed not less than twenty months of continuous service in the armed forces of the United States during World War II and prior to the beginning of the 1945-46 fall semester.

wise eligible may be admitted on proof of experience and attainment as an alternative. Advanced standing will not be granted for credits earned while a candidate for the first degree in law. Credits earned as an unclassified student will not be applicable toward meeting the requirements of the degree unless specific provision therefor is included in the letter of admission.

Master of Comparative Law and Master of Comparative Law (American Practice).—The following are required: (1) the successful completion of and graduation from a course in arts, philosophy, letters, or sciences, equivalent to graduation from a gymnasium, lycee, or liceo; and (2) graduation in law from a recognized foreign university where training was in Civil Law.

Doctor of Juridical Science.—The following are required: a Bachelor of Arts or equivalent degree from an approved college or university and a Bachelor of Laws or equivalent degree, earned with high rank, from a member school of the Association of American Law Schools, and outstanding capacity for scholarly work in the field of law.

Unclassified Students

A person who is in good standing as a degree candidate in another law school which is a member of the Association of American Law Schools may, at the discretion of the Dean, be admitted as an unclassified student in order to earn credits for transfer to the other law school.

A person who is a member of the bar or a person, not a member of the bar, who is a graduate of a member school of the Association of American Law Schools may, at the discretion of the Dean, be admitted as an unclassified student.

Unclassified students participate in the work of the course and take examinations. Courses taken by unclassified students will not be credited toward degrees at this Law School.

Continuing Legal Education Students

A simplified admission and registration procedure is provided for members of the bar desiring to register as continuing legal education students to take courses on a noncredit basis. Registration as a Continuing Legal Education student does not entitle the registrant to participate in the student activities or benefit from the medical privileges of the University. Members of the bar desiring to register as degree candidates or as unclassified graduate students should file the regular application for admission form.

REGISTRATION

Before attending classes each student must present himself in person for registration. No student will be registered in the Law School until proper credentials have been filed and approved (see "Admission").

Registration is for the semester or session only.

A late-registration fee of \$5 will be charged each student who is permitted to register after the regular registration days.

Registration may be changed only with the permission of the Dean.

FEES AND FINANCIAL REGULATIONS

Application fee, charged each applicant for admission as a degree candidate, non-refundable	\$10.00
Application fee, charged each applicant for admission as a non-degree candidate, non-refundable	5.00
Tuition fee, for each semester hour for which the student registers	21.00
For the degree of Doctor of Juridical Science	
For work leading to and including the final examinations	600.00
Special fee, Law School (\$1.25, Student Bar Association activities, \$1.75, Law Review), charged each student in the Law School for each semester or any part thereof except the summer sessions	3.00
Graduation fee	25.00
Fee for printing summary of doctoral dissertation	85.00
Fee for special examinations, for each subject	5.00
Late-registration fee, charged each student who fails to register within the designated period	5.00
Residence fee, charged each student violating to maintain "in residence" status during any semester of absence from the University or after completion of tuition requirements	21.00
Stipend fee, charged each student for late payment of tuition, see "Payment of Fees"	2.00
Reinstatement fee, charged each student who is reinstated after being suspended for delinquency in fees	5.00

Registration in the University entitles each student to the following University privileges: (1) the issuance of one certified transcript of record, if and when desired; (2) the services of the Placement Office; (3) the use of University library facilities, except as otherwise designated; (4) gymnasium privileges; (5) admission to all athletic contests, unless otherwise specified; (6) subscription to the *University Hatchet*, the student newspaper; (7) admission to University debates; (8) medical attention and hospital services as described under "Health Administration" pages 31-32. These privileges, however, with the exception of the issuance of transcripts, terminate, and a student is no longer in residence, when he withdraws or is dismissed from the University.

PAYMENT OF FEES

All fees are payable at the Office of the Cashier, 725 Twenty-first Street NW. No student is permitted to complete registration or to

attend classes until all fees are paid. Fees for each semester are due and payable in advance at the time of registration.

Subject to the approval of the Treasurer, a student may sign a contract for semester charges, except for fees payable in advance, permitting payments as follows:

Fall Semester.—One third at the time of registration; one third on November 2; one third on December 1.

Spring Semester.—One third at the time of registration; one third on March 1; one third on April 1.

A student who fails to meet payments when due but who pays his fees on or before the fifteenth of the month in which payment is due is charged a service fee of \$2. A student who fails to meet payments by the fifteenth of the month in which payment is due will be automatically suspended and may not attend classes until he has been officially reinstated and has paid all accrued fees and a reinstatement fee of \$5.

A student suspended for failure to meet payments when due may not be reinstated for the semester after two weeks from the date of suspension. Applications for reinstatement are to be made to the Office of the Cashier.

WITHDRAWALS AND REFUNDS

Application for withdrawal from the University or for change in class schedule must be made in person or in writing to the Dean. Notification to an instructor is not an acceptable notice.

In authorized withdrawals and changes in schedules, financial adjustments will be made as follows:

Fall Semester.—Withdrawal dated on or before October 31, cancellation of two-thirds of tuition charges; withdrawal dated on or before November 30, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to November 30.

Spring Semester.—Withdrawal dated on or before February 29, cancellation of two-thirds of tuition charges; withdrawal dated on or before March 31, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to March 31.

In no case will a refund be made of the first third of the total tuition charges unless the registration is in advance and the course is dropped before the regular registration day. In this case a withdrawal fee of \$5 is charged and tuition fees refunded. In no case will tuition be reduced or refunded because of nonattendance upon classes.

Payment applies only to the semester for which a registration charge is incurred and in no case will this payment be credited to another semester.

Authorization to withdraw and certification for work done will not be given a student who has not a clear financial record.

Withdrawal from a course or from the University between October 31 and the end of the fall semester and between February 29 and the end of the spring semester is permitted only in exceptional cases.

The grade of *F* (to be counted as zero) will be given in a course dropped without the approval of the Dean.

All charges for courses dropped without the approval of the Dean must be met by the student. Reporting the dropping of a course to an instructor does not effect its discontinuance.

FELLOWSHIPS, SCHOLARSHIPS, PRIZES, LOAN FUNDS

Law School Research Assistantships.—Student research assistantships are available each year to students currently enrolled in the Law School, preference being given to applicants who are completing their second year. Each assistant receives an annual stipend. Awards are made on the basis of academic standing, financial need, and capacity for leadership. Research assistants have duties similar to those of teaching fellows. Applications should be submitted to the Dean of the Law School not later than May 1.

Law School Teaching Fellowships.—Teaching fellowships are available each year to prospective candidates for the Master of Laws degree. Each fellow receives an annual stipend, plus tuition for the academic year. Teaching fellows follow an approved program of study and research, assist members of the Faculty in the guidance of first year students, and supervise student work in legal bibliography and the drafting of legal instruments. Upon satisfactory completion of the year's work, a fellow is recommended for the degree of Master of Laws. Applications should be submitted to the Dean of the Law School not later than March 1.

Charles Worthington Dorsey Memorial Scholarship.—This scholarship, established in 1947 as a memorial to Charles Worthington Dorsey, Bachelor of Laws, '81, Master of Laws, '82, is awarded upon the recommendation of the Faculty of the Law School to a needy and promising graduate of Columbian College or other division of the University, with a Bachelor of Arts or other equivalent degree, who has maintained an average of *B* as an undergraduate student and who desires to pursue the study of law as a full-time student. The scholarship covers tuition for the course leading to the first degree from the Law School, Bachelor of Laws or Juris Doctor, provided that the holder maintains an average of *B*. The right is reserved to suspend the benefits of the scholarship for cause at any time. The scholarship is awarded ordinarily once every three years.

Law School Scholarships.—Scholarships are available each year in the Law School to graduates of accredited colleges. Each scholarship provides full three-year tuition in the morning division of the Law School. Candidates must have graduated in the upper fifth of their class and must have demonstrated qualities of leadership in addition to scholastic attainment. To retain the scholarship, the successful candidate must maintain a *B* average. Application must be made before March 1 to the Dean of the Law School.

Phi Delta Delta Scholarship.—Zeta Chapter of Phi Delta Delta Legal Fraternity (International) offers annually a scholarship in the amount of \$40 to the woman student in the sophomore class who has excelled in scholastic achievement and service to the Law School in her first year.

Charles Glover Prize.—This prize, established in 1957 by Charles Carroll Glover, Jr., a Trustee of the University, in memory of his great-grandfather, Charles Glover, an illustrious member of the bar of the District of Columbia, consists of selected law books and is awarded annually to the student in the Law School who has attained the highest average grade in the third-year, full-time course.

Kappa Beta Pi Prize.—Eta Alumnae Chapter of Kappa Beta Pi Legal Sorority offers an annual prize which consists of a copy of *Blackstone's Commentaries* or a legal dictionary to be awarded to the woman law student who attained the highest average in her first year.

John Bell Larner Prize.—This prize, established by the bequest of John Bell Larner, consists of a medal which is awarded annually to that member of the graduating class in the Law School who attains the highest average grade in the entire course for the degree of Bachelor of Laws or Juris Doctor.

John Ordronaux Prizes.—These prizes were established in 1900 by the bequest of John Ordronaux.

The amount of \$75 is awarded annually to the student in the Law School who has attained the highest average grade in the first year, full-time course; and \$75 to the student who has attained the highest average grade in the second-year, full-time course.

Through the generosity of friends of the University a number of loan funds are available to students in the Law School. Among them is the Henry Strong-William A. Maury Loan Fund established by the Henry Strong Educational Foundation in memory of Henry Strong and William A. Maury. Application for loans should be made to the Treasurer of the University.

REGULATIONS

Students in the Law School are subject to, and are expected to familiarize themselves with, the general University regulations stated in the University Catalogue.

AMOUNT OF WORK

Students without substantial outside employment may take a program of studies of fourteen hours a week. Such students may take courses in the evening only if they are not available in the morning and if a majority of the hours taken are in morning courses. Students, whether in the morning or evening division, with substantial outside employment must take a limited program of studies not exceeding ten hours a week. Students taking a majority of their classes in the evening may not take more than ten hours a week. A minimum schedule of ten hours in the morning division and six hours in the evening division is required except in exceptional circumstances when, as to continuing students, a reduced program is authorized by the Dean.

ATTENDANCE

Regular attendance at classes is required and is necessary for successful work. A student who is deficient in class attendance in any course may be barred from taking the examination.

RESIDENCE REQUIREMENTS

Candidates for the degree of Bachelor of Laws must complete a residence period of three academic years. Attendance in the morning division for the fall and spring semesters constitutes residence for an academic year; similar attendance in the evening division constitutes residence for three-fourths of an academic year. Consequently, a morning student must attend six semesters to meet residence requirements; an evening student must attend eight. Students authorized to take schedules of less than ten hours in the morning division or less than six hours in the evening division receive residence credit on a proportional basis. Students who attend the summer sessions receive fractional residence credit. For details see page 28.

Students planning to attend summer school sessions at other law schools and desiring to use credits obtained at such schools in their course at this Law School must first have the courses they wish to take approved by the Dean. In no event will credits be recognized in excess of those which might be obtained in a similar period in this School.

GRADUATION REQUIREMENTS

Application for Graduation.—Application for a degree should be filed in the Office of the Registrar at the time of registration for the last semester of the senior or final year.

Presence at Graduation.—A candidate is required to be present at the

graduation exercises unless written application for graduation in absentia is approved by the Dean.

EXAMINATIONS

Written examinations are held at the end of each course. Every student is required to take the regular examinations unless excused. No excuse for absence will be granted except by the Dean and then only for illness or other emergency. Application for excuse must be made in writing not later than one month after the date of the examination. An entry of *NG* (no grade) will be made on the record of a student thus excused. To receive credit for the course, he must take the next regularly scheduled examination.

No special examinations will be given; except that, upon written application to the Dean, showing sufficient cause, a candidate for a degree at a convocation before the next regular examination, if he would be entitled to take a postponed examination, may, at the discretion of the Faculty, be given a special examination.

If a student fails to take an examination, a grade of *F* (to be counted as zero) will be recorded unless he has been excused from the examination as provided above or has obtained the Dean's permission to drop the course.

GRADES

Grades are indicated by the letters *A*, excellent, 85-100; *B*, good, 75-84; *C*, satisfactory, 65-74; *D*, poor, 55-64—below standard for graduation; *F*, failed—below 55; and *NG*, no grade—student excused from failure to take regularly scheduled examination. See "Examinations" above, for grade upon failure to take an examination. The grades *A*, *B*, *C*, and *D* mean that the work has been completed and credit given for the courses. *F*, failed, means that no credit will be given. To obtain credit the student must repeat the course, except that a student who has obtained an average of *C* in the work of the semester just completed and the preceding semester and received a grade of *F* in only one course during those semesters may, in exceptional cases with the consent of the Faculty, take the next regular examination in that course. If the failure occurs in the first semester, the succeeding semester is used as the second semester. The privilege is limited to taking the next regular examination, except that a candidate for a degree at a convocation before the next regular examination may be permitted to take a special examination at the end of the next semester. If on the reexamination the student receives a passing grade he will be given credit in the course. Both grades are recorded.

EXCLUSION AND PROBATION FOR POOR SCHOLARSHIP

Candidates for the Degrees of Bachelor of Laws and Juris Doctor.—

A student who in one semester, or two successive semesters, fails in courses aggregating eight or more semester hours will be excluded, except that if currently registered he will be permitted to complete the work of the semester. Such a student is not eligible thereafter to be registered in the Law School or to attend classes. While excluded he may, however, with the consent of the Faculty, be admitted to the next regular examinations in those courses in which he has made a grade below passing, and if he receives a grade of passing in those courses with an average sufficient to make his cumulative average not less than C, he will be reinstated.

A student not subject to exclusion under the foregoing rule who at any time fails to maintain a cumulative average of at least C will be placed on probation. A student on probation may at the discretion of the Dean be required to reduce his program of study. If a student on probation does not, by the end of the second semester following that in which his average has fallen below C, receive grades sufficient to give him a cumulative average of at least C, he will be excluded.

The cumulative average of a student includes all the grades in all the courses taken while he is in the Law School as a candidate for a particular degree. When a course is repeated or a reexamination is taken, both the first grade and the subsequent grade or grades are counted in the cumulative average.

In special cases in which a student who has been excluded can clearly demonstrate that his low grades were due to special circumstances beyond his control and that he has the capacity to pursue the study of law with a definite likelihood of success, such student may be readmitted by the Faculty subject to such conditions as the Faculty may impose.

Candidates for Graduate Degrees.—A candidate for one of the graduate degrees whose work is not satisfactory in the opinion of the Faculty, taking into consideration the requirements and standards for the degree, may, by action of the Faculty, be excluded at the end of the semester for which he is currently registered.

Unclassified Students.—An unclassified student whose work is not satisfactory in the opinion of the Faculty may, by action of the Faculty, be excluded at the end of the semester for which he is currently registered.

CLASSIFICATION OF STUDENTS

Candidates for the degree of Bachelor of Laws are divided into classes on the completion of semester hours as follows: first year, one through twenty-eight; second year, twenty-nine through fifty-six; third year, fifty-seven or more.

RIGHT TO CHANGE RULES

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.

RIGHT TO DISMISS STUDENTS

The right is reserved by the University to dismiss or exclude any student from the University or from any class or classes, whenever, in the interest of the student or the University, the University Administration deems it advisable to do so.

STUDENT LIFE

LIVING ACCOMMODATIONS

The University maintains four residence halls. Meals are served at the Student Union.

Admission to the University does not include room reservation. A separate application for a room should be made well in advance (for the fall semester by May 1, for the spring semester by January 1). Forms for application, together with detailed information, may be obtained from the Director of Activities for Women or the Director of Activities for Men.

Information concerning private rooming and boarding facilities near the University, for women students twenty-one years of age or older and for men students, may be obtained at the Housing Office, Lisner Auditorium. The reservation of rooms in private houses must be made by students.

Girls under the age of twenty-one who are enrolled for twelve or more semester hours of academic work in the University and who are not living with their parents or relatives may live outside the dormitories only with the permission and approval of the Director of Activities for Women, upon receipt of written requests from parents. In no case will permission be granted for such girls to be domiciled outside the dormitories except with persons approved by the Director of Activities for Women.

Women Students.—The Hattie M. Strong Hall provides single rooms at \$40 a month and double rooms at \$39 a month a person.

The Dolly Madison Hall provides double rooms at \$35 a month a person.

Men Students.—Welling Hall provides double rooms at \$30 a month a person.

The John Quincy Adams Hall provides 69 double rooms, each with study alcove and bath. Rooms rent at \$37.50 a month a person.

PLACEMENT

The University Placement Office, 2114 G Street NW., provides assistance to students seeking full- and part-time employment. This office maintains a registry of positions locally and nationally available and refers qualified applicants for consideration. Information is also available on Civil Service examinations.

The Law School takes a continuing interest in the placement of its graduates and maintains a placement service for that purpose. The Dean, the Faculty, and the University Placement Office cooperate in collecting information from alumni of the Law School, law firms, and government agencies concerning opportunities for legal positions throughout the country. Students and recent graduates are invited to discuss their placement problems with the Secretary of the Law School.

HEALTH ADMINISTRATION

The University maintains a health service that is primarily diagnostic in its intent. For medical emergencies and health consultations there is, on the Campus, a Student Health Clinic open from 9:00 A.M. to 5:00 P.M., with physician and nurse in attendance. There is also a rest room for women, with a graduate nurse in charge.

Medical privileges include: (1) the physical examination of every student entering from secondary school; (2) three visits by the University physician or surgeon, office or residence (District of Columbia), in any one illness, exclusive of a specialist, surgical operation, laboratory, or X-ray examination; (3) hospitalization, including board and nursing in the University Hospital for not more than one week during any twelve month period—the necessity to be determined by the Director of Health Administration. All additional hospital charges for operating room, laboratory, anesthetics, X-ray, medications, or any other special service must be paid by the student. The duration of hospitalization period (maximum, one week) is also to be determined by the Director of Health Administration.

This medical benefit does not apply to illness or disability incurred previous to the University semester or prior to payment of tuition fees.

The student is allowed, if he so desires, to engage physicians and nurses of his own choice, but when he does so he will be responsible for the fees charged.

Rules: (1) The Director of Health Administration is empowered to limit or deny the medical benefits where, in his discretion, a student has, by his misconduct or breach of the rules of the University, made himself

ineligible; (2) the Director of Health Administration has authority to determine the necessity and length of hospitalization; (3) a student who has severed his connection with the University is ineligible for medical benefits; (4) a student intending to train for an athletic team is required to pass a thorough examination at the beginning of each semester; (5) the above regulations apply also during the summer sessions of the University.

The University is not responsible for injuries received in intercollegiate or intramural games, or in any of the activities of the departments of physical education.

THE DEGREES OF BACHELOR OF LAWS AND JURIS DOCTOR

The programs of study leading to the degrees of Bachelor of Laws and Juris Doctor are addressed to the development and application of legal principles, skills, and ideals which are indispensable to the equipment of a lawyer for professional responsibility and leadership in modern society. They include, first and foremost, the traditional core of legal education, namely, the study of legal materials—judicial, statutory, and administrative—and instruction in the technique of their use. These programs include the study of the nature and purpose of law, the history of the Anglo-American legal system, and the history and standards of the legal profession; practice in the skills of legal research and legal writing; elementary training in trial practice; and, through the medium of seminars, experience in group handling of legal problems.

REQUIREMENTS FOR THE DEGREES

BACHELOR OF LAWS

To be recommended for the degree of Bachelor of Laws (LL.B.) the student must have completed a residence period of not less than three academic years (four years for evening students) and eighty semester hours, with a cumulative average of at least C. At least one academic year of residence and twenty-eight semester hours are required of students admitted with advanced standing. Credits allowed by way of advanced standing are not included in computing the average required for graduation.

JURIS DOCTOR

The degree of Juris Doctor (J.D.) is conferred as a recognition of the completion at the George Washington University Law School, with high rank, of the required program of study for the Bachelor's degree, including experience in research and legal authorship. To be recommended

for this degree the student must have completed: (1) a residence period of not less than three academic years (four years for evening students); (2) eighty semester hours with a cumulative average of at least *B* including one of the following courses: Comparative Law, Jurisprudence, or one of the graduate seminars; and (3) one year of acceptable service on the board of student editors of *The George Washington Law Review*, election to which is subject to regulations laid down by the Faculty. All requirements for the degree must be completed at this Law School.

HONORS

The degree of Bachelor of Laws or of Juris Doctor "with distinction" will be awarded students who obtain a cumulative average of *A*.

CURRICULUM

Required and Elective Courses.—A program of required and elective courses has been developed in order to assure coverage of the basic courses as well as to allow a degree of flexibility to meet the diverse interests of students. All first-year courses, three second-year courses, and one third-year course are required, leaving a total of thirty-eight hours of electives. In general, second-year students are restricted to second-year electives but in appropriate cases the taking of third-year electives will be approved. Similarly, specially qualified third-year students may secure approval to take graduate courses and research in public law.

Practice and Trial Practice Court.—Classroom instruction is conducted in pleading and procedure, trial and appellate practice, and evidence. This instruction includes grounding in the principles of the Federal Rules of Civil Procedure and the Federal Rules of Criminal Procedure. In addition, each senior student is required to participate in the work of the Trial Practice Court, which includes the trying of cases as junior counsel and as senior counsel. A special section of the court is devoted exclusively to the trial of patent cases. Experience in preparing and arguing appellate court cases is available through the Case Club Competition.

Patent Law.—Students interested in patent law should take the following group of courses: Unfair Trade Practices, Patent Law I and II, Patent Office Practice, Patent Trial Practice Court, Federal Antitrust Laws, and Trade Regulation Seminar.

Curriculum.—Following is the curriculum for students beginning in the fall semester. Adjustments are made to meet the needs of students beginning in the spring semester and in the summer.

Morning Division

FIRST YEAR

FALL SEMESTER	Semester Hours	SPRING SEMESTER	Semester Hours
Contracts I	4	Agency	2
Legal Method and Legal System ..	4	Constitutional Law	4
Personal Property	2	Contracts II	2
Torts	4	Criminal Law and Procedure	4
		Real Property	2
Total	14	Total	14

SECOND YEAR

FALL SEMESTER	Semester Hours	SPRING SEMESTER	Semester Hours
Civil Procedure	4	Evidence	4
Conveyances	2	Electives	10
Electives	8		
Total	14	Total	14

THIRD YEAR

FALL SEMESTER	Semester Hours	SPRING SEMESTER	Semester Hours
Trial Practice Court	2	Trial Practice Court	2
Electives	10	Electives	10
Total	12	Total	12

Evening Division

FIRST YEAR

FALL SEMESTER	Semester Hours	SPRING SEMESTER	Semester Hours
Contracts I	4	Contracts II	2
Legal Method and Legal System ..	4	Criminal Law and Procedure	4
Personal Property	2	Torts	4
Total	10	Total	10

SECOND YEAR

FALL SEMESTER	Semester Hours	SPRING SEMESTER	Semester Hours
Agency	2	Constitutional Law	4
Civil Procedure	4	Conveyances	2
Real Property	2	Electives	4
Elective	2		
Total	10	Total	10

THIRD YEAR

FALL SEMESTER		SPRING SEMESTER	
	Semester Hours		Semester Hours
Electives	10	Evidence	4
Total	10	Electives	6
		Total	10

FOURTH YEAR

FALL SEMESTER		SPRING SEMESTER	
	Semester Hours		Semester Hours
Trial Practice Court	2	Trial Practice Court	2
Electives	8	Electives	8
Total	10	Total	10

GRADUATE PROGRAM

DEGREES OF MASTER OF LAWS AND DOCTOR OF JURIDICAL SCIENCE

The administration of justice under law is a matter so vast and complex that some graduates feel the need for further study in order to broaden and deepen their understanding of the law. Others wish to extend their study into rapidly developing specialized fields. Graduate instruction, leading to the degree of Master of Laws, is therefore offered to enable qualified students to attain one or both of these objectives.

The degree of Doctor of Juridical Science is offered for selected students whose aim is to extend still further their studies by pursuing original research in law.

Graduate work is available to evening as well as morning students in order that lawyers in private practice and in government service may engage in advanced study or in original research.

PROGRAMS OF STUDY FOR FOREIGN LAWYERS

Two programs of study are provided to meet the needs of lawyers who come from countries whose legal systems are not based on the English law. For such lawyers, whose aim is to acquire an understanding of our system so that they may work intelligently with its materials and practitioners after returning to their own countries, there is available the degree of Master of Comparative Law. For foreign lawyers, however, who wish to practice in a common law jurisdiction there is available the degree of Master of Comparative Law (American Practice) with an appropriate program of study. With respect to both programs, the students are not assigned to special classes but work in association with

the other students in the regular courses, each student's program being adapted to his individual needs.

NONDEGREE STUDY: CONTINUING LEGAL EDUCATION

As a result of changes and expansion in various fields of the law many lawyers pursue graduate study in order to keep abreast of current developments. Consequently, an important part of the graduate program is to provide for members of the bar not desirous of becoming degree candidates. The offerings in the field of governmental regulation provide opportunities for specialization. Although third-year and graduate courses are particularly suitable, first-year and second-year courses may be taken in appropriate cases. Members of the bar taking graduate work in this way register as unclassified students or as continuing legal education students.

RESEARCH IN PUBLIC LAW

Research in public law is conducted under the supervision of members of the Faculty. The purpose of this research is to furnish means for training specialists in public law, either as government lawyers or as lawyers representing individuals or corporations in cases in which the Government is a party, and to assist in the analysis, clarification, formulation, and improvement of public law, substantive and procedural.

Candidates for the graduate degrees in the Law School and specially qualified seniors may pursue this work.

REQUIREMENTS FOR THE DEGREES

MASTER OF LAWS

To be recommended for the degree of Master of Laws (I.L.M.) the student must have completed a residence period of not less than two semesters. Such residence should normally be continuous. All requirements for the degree must be completed in this Law School and in a period not exceeding two years after registration for work for the degree. The student must have completed, with a minimum average of B, twenty semester hours in courses listed in the law curriculum as graduate courses except that in appropriate cases third-year courses may be approved for inclusion in the program of study if not previously taken.

MASTER OF COMPARATIVE LAW

The degree of Master of Comparative Law (M.Comp.L.) is for foreign students who intend to return to their countries. To be recommended for this degree the student must have completed a residence period of not less than one academic year. He must have completed satisfactorily twenty-four semester hours in approved courses in the cur-

riculum of the Law School or of such other departments of the University as the Faculty of the Law School shall approve.

MASTER OF COMPARATIVE LAW (AMERICAN PRACTICE)

The degree of Master of Comparative Law, American Practice (M. Comp.L. (Am. Prac.)) is for foreign students who intend to remain in this country. To be recommended for this degree the student must have completed a residence period of not less than one academic year. He must have completed twenty-eight semester hours in approved courses in the curriculum of the Law School with a cumulative average of at least C.

DOCTOR OF JURIDICAL SCIENCE

To be recommended for the degree of Doctor of Juridical Science (S.J.D.) the student must have completed a residence period of not less than one academic year. He must have pursued a course of study and research designated by his consultative committee and approved by the Committee on Graduate Studies. At the conclusion of his first year of residence, or at such other time as the Committee on Graduate Studies may set, the candidate must pass an oral examination in those fields of study selected by the consultative committee. This examination shall be conducted by the consultative committee and such other members of the Faculty and qualified experts as may be selected by the Committee on Graduate Studies.

Not later than the date specified in the University calendar the candidate must submit to the Dean one typewritten original and two legible and complete carbon copies of his dissertation in its final form. The dissertation must contain a summary of from 2,500 to 3,000 words inserted as an appendix. An additional original typewritten copy of this summary must be submitted for publication. To be acceptable the dissertation must, in the opinion of the examining committee, constitute a substantial contribution to the field of law concerned and be suitable for publication. Additional information will be supplied by the Chairman of the Committee on Graduate Studies.

The summaries of accepted dissertations will be printed in a volume forming a number of the University BULLETIN. The successful candidate for the doctorate is required, before receiving his degree, to pay a fee to cover the expense of printing the summary of his dissertation.

SUMMER TERM

A term of two sessions, with morning and evening classes, is offered in the summer. Beginning students may start their studies in the first

session only; continuing students and transfer students may register for either or both sessions.

The summer term is shorter than a semester of the academic year, and, as a consequence, a student must attend two and one-half summer terms to receive residence for one academic year or attend one and one-half summer terms to receive residence for a semester.

A maximum of six semester hours may be taken each session by morning students. Such students will receive two-fifths of a semester of residence credit upon the completion of four or six semester hours in one session, and will receive four-fifths of a semester of residence credit upon completion of eight or more semester hours in two sessions. A maximum of four semester hours may be taken each session by evening students. Such students will receive three-tenths of a semester of residence credit upon the completion of four semester hours in one session, and will receive six-tenths of a semester of residence credit upon the completion of six or eight semester hours in two sessions.

Summer students planning to take the New York bar examination must register at the beginning of the term for both sessions and must complete both.

COURSES OF INSTRUCTION

COURSES OF INSTRUCTION

The courses of instruction listed below are subject to change. The University reserves the right to withdraw any course announced.

First year courses are numbered from 100 to 200; second-year courses, from 201 to 300; third-year courses, from 301 to 400; and graduate courses, from 401 to 500.

The number of hours of credit given for the satisfactory completion of a course is indicated in parentheses after the name of the course. Thus, a year course giving two hours of credit each semester is marked (2-2), and a semester course giving two hours of credit is marked (2).

Morning classes begin at 9:10 A.M. Evening classes begin at 5:50 P.M.

FIRST YEAR

100 *Agency* (2)

Cooper, Freedman, R. Harris

Fall—evening, spring—morning; summer 1959

Master and servant (status of agent), respondeat superior, nature of agency relation, actual authority, parties (disclosed and undisclosed principal), unauthorized transactions, notice, notification

110 *Constitutional Law* (4)

Czyzak, Dixon

Spring—morning and evening

Basic principles of American constitutionalism; judicial function in constitutional cases; implementation of doctrines of separation of powers, federalism, limited government; development and exercise of national powers; introduction to civil rights and liberties

115-16 *Contracts I, II* (4-2)

Mayo, Ledakis, Schultz

Academic year—morning and evening, summer 1959

Scope of protection accorded contracts, specific performance of contracts other than land transactions, damages, restitution. Mutual assent: offer and acceptance, misunderstanding, mistake, reformation, parol evidence rule. Consideration, third party beneficiaries, assignments, conditions, Statute of Frauds.

125 *Criminal Law and Procedure* (4)

Cooper

Spring—morning and evening, summer 1959

Origin and purposes of criminal law, elements of criminal liability; mental disorders, solicitation, attempt, and conspiracy, crimes against the person, against property, and against public statutory offenses, criminal procedure, with consideration of Federal Rules of Criminal Procedure.

- 135 *Legal Method and Legal System* (4) Fryer, Benson, Davison, Orentlicher, Merrifield, Goldsborough

Fall—morning and evening; spring—morning and evening; summer 1959.

Introduction to substantive and procedural law dealing with basic concepts; training in method and technique of case law and legislation using modern case records, practice in use of law books and in legal writing, importance of language in law; legal reasoning and use of precedents under doctrines of *stare decisis*, law of the case, and res judicata; development of Anglo-American legal system, organization of judiciary and bar, stressing enforcement of ethical standards.

- 145 *Personal Property* (2) Fryer, Dixon, Mallison, Guilian, Nash

Fall—morning and evening; spring—evening; summer 1959.

Concepts of property, including interests created by bailments, liens, and pledges, methods of acquiring ownership.

- 150 *Real Property* (2) Benson, Walburn, Ledakis, Stevenson

Fall—evening; spring—morning; summer 1959.

Historical background of the law of estates and conveyances, possessory estates, concurrent estates.

- 160 *Torts* (4) Merrifield, Walburn, R. Harris, Garrett

Fall—morning; spring—morning and evening.

Liability for harm to persons or tangible things; defamation and invasion of privacy.

SECOND YEAR

- 202 *Administrative Law* (4) Davison

Spring—morning and evening, summer 1959.

The position of the administrative process in the separation of powers, including the status of administrative personnel, administrative hearings, judicial scrutiny of administrative action, discretion, and rule-making—particularly as relating to federal administrative agencies.

- 205 *Brief Writing and Oral Argument* (2)

Not offered 1959-60.

Exposition and study of the basic techniques of written and oral legal argumentation. Each student will be required to write, as a term paper, a brief presenting contentions based on the actual record in an unargued case.

210 *Business Associations* (4)

Weaver

Spring—morning and evening; summer 1959.

Contrast of the partnership and corporation as alternative forms of organization; organizing partnerships and corporations—formalities, capital contributions, share structure; problems of operation; relations between partners; roles of shareholders, directors, officers; control devices; distributions to owners; voluntary reorganization; dissolution and termination.

215 *Civil Procedure* (4)

Walburn, R. Harris

Fall—morning and evening; summer 1959.

Pleadings, discovery, burden, forms of trial and related proof problems. Emphasis is on Federal Rules of Civil Procedure and other modern codes.

219 *Commercial Paper* (4)

Orentlicher, Ledakis

Fall—morning and evening; summer 1959

Bills of exchange, promissory notes and checks, especially under the Negotiable Instruments Law.

224 *Commercial Transactions* (4)

Orentlicher

Spring—morning and evening

The law relating to the sale and distribution of goods, and to the security financing devices utilized in this connection, with particular attention to the effect of uniform laws.

230 *Conveyances* (2)

Benson, Walburn

Fall—morning; spring—evening; summer 1959

Conveyances, recording; easements, profits, covenants, and equitable servitudes, adverse possession, and adverse user.

235 *Domestic Relations* (2)

Williams

Fall—morning and evening; summer 1959

Marriage, annulment, and divorce; adoption and custody of children; cohabitation.

240 *Evidence* (4)

Fryer, Weston

Spring—morning and evening; summer 1959

Functions of court and jury; qualifications and examination of witnesses; opinion, relevancy and scientific evidence; proof of writing; application of the hearsay rule.

243 *Federal Jurisdiction (2)*

Cooper

Fall—morning and evening.

Constitutional and statutory origins of federal courts, cases arising under the laws and the Constitution, diversity of citizenship, jurisdictional amount, removal procedure and jurisdiction, innovations on federal jurisdiction, state and federal conflicts, substantive law applied by federal courts.

248 *Future Interests (2)*

Benson

Spring—morning and evening

Future interests at common law and under modern statutes, construction of limitations, powers of appointment, rule against perpetuities

251 *Insurance (2)*

Summer 1959.

The insurance device in life, property, and other risks

254 *International Law and World Order (4)*

Mallison

Fall—morning and evening

Traditional content of course in international law presented in context of values and interaction of the world community, formal procedure and effective practice concerning participation in decision-making process, roles of individuals, international public organizations, United Nations, private groups, private associations, and national states.

259 *Labor Law (4)*

Merrifield

Spring—morning and evening

Law governing labor-management relations, organization and representation of employees, regulation of industrial weapons, enforcement of collective bargaining agreements, interunion and intraunion relations.

265 *Legal Accounting (2)*

Hambrick

Fall—morning, spring—evening, summer 1959

A study of elementary accounting principles and techniques, application of accounting principles to legal problems.

270 *Legislation (2)*

Fryer, Mallison

Fall—morning and evening

The legislative process and roles of various participants in the process; operation of the United States Congress, including fact finding, organization, and procedure; problems of statutory interpretation.

274 *Taxation—Federal Estate and Gift* (2)

Hambrick

Fall—morning and evening.

A survey of the substantive provisions of the federal estate and gift tax laws, including inter vivos transfers, transfers in contemplation of death, joint interests, life insurance proceeds, property subject to powers of appointment, the marital deduction and split gift; tax procedure.

279 *Taxation—Federal Income* (4)

Hambrick

Spring—morning and evening; summer 1959.

Survey of substantive provisions of federal income tax, including concepts of gross income, limitations on allowable deductions, problems of capital gains taxation, nonresidence expropriation of property, basic problems, provisions affecting the taxation of the family, and principles of income tax accounting.

285 *Trusts and Estates* (4)

Weaver, Allen

Fall—morning and evening.

Particulars of execution of wills; problems of construction, testamentary trusts, trusts in testamentary power, testamentary succession. Creation of trusts, joint and testamentary administration of decedent's estate and trust estates.

295 *Unfair Trade Practices* (4)

Weston

Fall—morning and evening.

Unfair trade practices at common law and under statutes; trade marks, trade names, copyright law; misrepresentation of goods; protection of trademarks and consumers against false advertising under Federal Trade Commission Act; unfair price discrimination under state Fair Trade Acts; miscellaneous business practices.

THIRD YEAR

302 *Admiralty* (2)

DAVIS

Spring—evening.

Federal and state jurisdiction, jurisdiction over waters, trade, navigation, torts, contracts, in seizable matters, etc.; laws applicable to maritime workers and maritime liens.

303 *Aviation Law* (2)

Not offered 1959-60.

Procedure before Civil Aeronautics Board; legal problems arising in connection with air transportation and airports; international conventions and organizations.

307 *Comparative Law* (4)

Davison

Fall—evening.

The Civil Law System; general introduction to foreign law as exemplified by Roman Law and the modern French Law; comparative study of administration of justice, legal institutions, and methods for international law practice and working with foreign lawyers.

309 *Conflict of Laws* (4)

Dixon

Fall—morning and evening, summer 1959

Legal problems arising from occurrences transcending state or national boundaries; jurisdiction; foreign judgments; constitutional influences; theoretical bases of choice of law principles and their application to specific fields, including torts, contracts, property, family law, administration of estates, and business associations.

313 *Constitutional Interpretations* (2)

Dixon

Not offered 1959-60.

Advanced course in constitutional law. The Constitution and constitutional tradition, process of judicial decision making, significance of "due process", current constitutional developments, adequacy of the traditional system of powers and limitations, introduction to comparative constitutional law.

318 *Creditors' Rights* (4)

Lodakis

Summer 1959.

Remedies of unsecured creditors; judgments, fraudulent conveyances, creditors' agreements, equity and statutory recoveries, and bankruptcy. The general approach is that of law administration.

321-22 *Current Decisions* (2-2)

Weston

Academic year—morning and evening.

Required of, and limited to, members of the student staff of the Law Review.

330 *Federal Antitrust Laws* (4)

Weston

Spring—evening.

Restraints of trade at common law and under Sherman Antitrust Act of 1890. Federal Trade Commission and Clayton Acts by mergers, monopolies, price fixing agreements, trade associations, exclusive-dealing agreements, tying sales, and trade boycotts, patents and copyrights under antitrust laws.

335 *Jurisprudence* (2)

Mayo

Fall—evening; spring—morning.

History of jurisprudence; schools of jurists, particularly the nineteenth century schools, sociological jurisprudence, theories of justice, the nature of law, law and morals, law and the state, the scope and subject matter of law, sources and forms of law, the traditional element, analysis of general legal concepts.

339 *Labor Arbitration* (2)

Merrifield

Not offered 1959-60.

Labor arbitration and collective bargaining, role of the lawyer in negotiation and administration of collective labor agreements; practices, procedures, and substantive issues in labor arbitration.

341 *Labor Standards and Social Security Legislation* (2)

Merrifield

Fall—evening.

Legal problems arising under federal and state statutes dealing with labor standards and social security. Particular emphasis is placed upon the regulation of wages and hours, workmen's compensation, and insurance against unemployment and old age.

345 *Legislative Drafting* (2)

Zinn

Fall—evening.

Advanced instruction and practice in legislative drafting. Prerequisite: Law 27.

349 *Local Government Law* (2)

Mallison

Spring—morning and evening.

The decision-making processes in metropolitan and local communities; types and objectives of city, county, and special function local government units; intergovernmental relations; original organization and changes; local lawmaking, community planning and development.

355 *Mortgages* (2)

Orentlicher

Summer 1959.

Security interests in real property, their creation, transfer, enforcement, and extinguishment.

359 *Patent Law I** (2)

Rebillard

Fall—evening.

Origin and nature of patents, patentable subject matter, classes of patents, novelty, utility, invention, patent claims and their interpretation, acts constituting infringement, duration of patents.

- 360 *Patent Law II* (2) L. Harris
 Spring—evening
 Lectures and discussion; licensing and protection of industrial property, uses and abuses of patenting, governmental regulation, protection abroad, economic and social functions of patents, trademarks, and copyrights. Prerequisite: Law 359.
- 362 *Patent Office Practice** (2) Rose
 Spring—evening
 Rules and practice, appeal and interference procedure.
- 365-66 *Patent Trial Practice Court** (2-2) Brown, Federico
 Academic year—evening
 Practice before the United States Court of Customs and Patent Appeals and the federal courts. Prerequisite: forty-two semester hours, including Law 215 and 240. Law 359, which is also required, may be taken concurrently.
 This course may be elected instead of Law 385-86 to satisfy the Trial Practice Court requirement.
- 370 *Public Utilities* (2) Fryer
 Not offered 1957-58
 Regulation by federal, state, and municipal authorities concerned with licensing, rates, services, and practices, with emphasis on federal regulation of interstate operations; judicial review.
- 376 *Restitution* (2) Orentlicher
 Spring—morning and evening; summer 1959.
 Remedies at law and in equity for restitution of benefits conferred, especially as based on the concept of unjust enrichment.
- 380 *Suretyship* (2) Orentlicher
 Summer 1959
 The law of suretyship, especially in the context of accommodation credit and commercial and financial practices, with attention also to informal and non-commercial suretyship relations and the place of suretyship principles in the solution of legal problems generally.
- 385-86 *Trial Practice* Jackson, Myers, Edgerton, Herrick,
Court (2-2) Monk, Walsh, Beard, Kendrick, Skinner
 Academic year—morning and evening.
 Trial of assigned cases; trial tactics and techniques; pre-trial and court room procedures pursuant to Federal Rules.
 To be taken in the senior year. Prerequisite: forty-two semester hours, including Law 215 and 240.

* Patent law students should take Law 360 and Law 365 concurrently in the fall semester and Law 362 and Law 366 concurrently in the spring semester.

391 *World Law* (2)

Mallison

Not offered 1959-60

International organization; the legal aspects of the United Nations; international constitutional law

GRADUATE COURSES

401 *Administrative Law Seminar* (2)

Davison

Spring—evening

Group study of specific problems in administrative law

408 *Constitutional Law Seminar* (2)

Dixon

Spring—evening

Group study of contemporary problems in constitutional law

412 *Control and Use of Atomic Energy* (2)

Mayo

Spring—evening

Various legal problems involved in the control and use of atomic energy will be examined, including the Atomic Energy Act, the policy underlying the present government monopoly, the serious problem of safeguarding atomic military information, the implications in prospective industrial control and use, and legal means of protecting personal interests against the possible consequences of atomic warfare

416 *Criminal Practice and Administration* (2)

Cooper

Spring—as arranged

Group study of the fundamental aspects of criminal procedure with special reference to practice before the District of Columbia and federal courts; the law of arrest, searches and seizures, self-incrimination, the function of the preliminary examination and grand jury, sufficiency of indictments, trial procedure, and the order of pleas and motions. Registration limited to fifteen students

420 *Estate Planning Seminar* (2)

Weaver

Spring—evening

Group study of the effective disposition of wealth, inter vivos and testamentary gifts, conservation for owner's future use, use of insurance, tax and administrative problems, business interests, pension and profit-sharing arrangements

424 *Evidence and Trials Seminar* (2)

Fryer

Fall—evening

Study of selected problems involving presentation of documentary proof and expert testimony in connection with the reforms sought by the Uniform Rules of Evidence and recent developments in the field of forensic medicine

- 428 *Food and Drug Law* (2) Goodrich, Kleinfeld
Spring—evening.

A lecture and discussion course dealing with the Federal Food, Drug, and Cosmetic Act and governmental controls thereunder. Both government and industry viewpoints are considered.

- 431 *Government Contracts I* (2) McIntire
Fall—evening.

A consideration of the basic power of the Federal Government to enter into contracts; the nature and construction of such contracts; normal and war or defense powers aspects of government procurement, including administrative and legislative policy and procedures; forms of contracts; standard clauses; advertised bid procedure problems; negotiated contracts; modification of contracts; remedies on contractual claims.

- 432 *Government Contracts II* (2) McIntire
Spring—evening.

Special problems in government contracts, including adjustments and relief; procedure for prosecuting claims under government contracts; attempts at price, cost, or profit control; termination.

- 438 *International Law Seminar* (2) Mallison
Spring—evening.

Group study of contemporary problems in international law.

- 442 *Labor Law Seminar* (2) Merrifield
Fall—evening.

Group study of contemporary problems in labor law.

- 446 *Law of Money and Monetary Obligations* (2) Dach
Not offered 1959-60.

Introductory survey of the provisions of public law by which money is administered, relating particularly to the Federal Reserve System, the legal character of money and of monetary obligations, legal tender, the "42¢ per dollar" rule and its limitations, protective clauses (gold, commodity, and index clauses). Particular emphasis will be given to the law relating to foreign money.

- 449 *Law of the Near East* (2) Liebman
Fall—evening.

A study of the law of the Arab countries, including the basic principles of the Islamic law, an analysis of the present day codes, and an investigation of the Western influences on the laws of the Arab countries.

455 *Legal Problems in Modern Methods of Warfare* (2)

Mallison

Not offered 1959-60.

The contemporary international law of war: legal aspects of modern methods of coercion (economic, political, psychological, and military); regulation of hostilities; the special problems of atomic, bacteriological, and chemical weapons; war crimes.

459 *Military Law and Jurisdiction* (2)

Not offered 1959-60.

Sources of military jurisdiction; military law proper, including court-martial jurisdiction and procedures before, during, and after trial; military government; martial law; laws of war and treatment of offenders.

463 *Regulation of Communication Media* (2)

Mayo

Fall—evening

An examination of the legal doctrine relating to regulatory practices in the channels of mass communications, i.e., newspapers, motion pictures, and radio-television. Analysis of the operational structure of the mass media and the pattern of control exercised by government, private associations, and various community groups. Appraisal of the comparative utility of various regulatory techniques for implementing policies affecting these media; special emphasis will be placed on the functions of the Federal Communications Commission.

466 *Regulation of Securities and Securities Markets* (2)

Cohen

Not offered 1959-60.

A study of state and federal laws governing the offering and distribution of securities to the public by corporate issuers and others; the regulation of securities markets; and the rights and liabilities of purchasers under such statutes. Particular emphasis will be given to statutes administered by the Securities and Exchange Commission.

469 *Research in Patent, Trade-Mark, and Copyright Law* (2)

L. Harris

Fall—as arranged, spring—as arranged

Registration limited to students with at least a B average who have taken Patent Law I and II and related courses including, as a *prerequisite*, Trade Regulation Seminar. Request in writing with proposed outline of topic of research must be submitted to the Dean at least one month prior to registration day. Registration permitted for one semester only; work must be completed within the semester and paper submitted not later than last day of classes.

471 *Research in Public Law* (2)

The Staff

Fall—as arranged; spring—as arranged

Registration limited to students with at least a *B* average who have had a seminar or comparable course in field of proposed research. Request in writing, with proposed outline of topic of research, must be submitted to the Dean at least one month prior to registration day. Registration permitted for one semester only; work must be completed within the semester and paper submitted not later than last day of classes.

475 *Taxation—Corporate* (2)

Hambrick

Fall—evening.

Case law and 1954 Internal Revenue Code provisions applicable to corporations; analysis of corporate distributions and liquidations; dispositions of stock, reorganizations and mergers; collapsible corporations; organization of corporations; sales of business enterprises; personal holding companies; accumulated earnings tax; and carry-over. Prerequisite: Law 279.

480 *Taxation—Oil and Gas* (2)

Hambrick

Spring—evening.

A study of the case law relating to percentage depletion, sales and transfers of interests in oil and gas properties, legal aspects of mining methods in oil and gas operations; application of percentage and corporation provisions of the 1954 Internal Revenue Code to oil and gas activities. Prerequisite: Law 279.

485 *Taxation Seminar* (2)

Hambrick

Spring—evening.

Selected problems in federal income, estate and gift taxation involving factual analysis and legal research, and the preparation of memoranda of law, legislative drafting or other appropriate documents. Theoretical problems or cases will be assigned to small groups for discussion and disposition. Registration subject to approval of teacher. Prerequisite: Law 274 and 279.

492 *Trade Regulation Seminar* (2)

Weston

Spring—evening.

Group study of current problems relating to unfair trade practices and federal antitrust laws.

495 *Urban Redevelopment* (2)

Orentlicher

Not offered 1959-60.

Selected problems in urban redevelopment and housing with particular emphasis on programs under current federal and state legislation.

DEGREES CONFERRED

BACHELOR OF LAWS

FEBRUARY 22, 1958

Walton Lee Baker	Va.	Richard George Kline	Md.
Sara Jacobson, Boudley	D.C.	A.B. 1949, Howard University	W.Va.
A.B. 1941, Radcliffe College	Idaho	Miss. George Kline	
Francis Burton		A.B. 1948, West Virginia University	
B.S. 1941, Ricks College	R.I.	A.M. 1941, The George Washington University	
David Backlund		John Cooper Leary	Va.
A.B. 1942, University of Iowa		F.S. 1941, Augustana College	D.C.
David William Catlett		Amos Abraham Mahan	
B.S. in M.E. 1941, University of Missouri		B.S. 1942, Worcester Polytechnic Institute	
Robert Wilson Coll	D.C.	William Everett Manson	N.H.
A.B. 1942, The George Washington University		A.B. 1942, University of New Hampshire	
Grover Carlton Cooper	Va.	Grant Elmer Mayberry	D.C.
A.B. 1942, Ohio Wesleyan University		A.B. 1942, The George Washington University	
Alexander Coney	N.Y.	Reynold Fisher McDonald, Jr.	Md.
A.B. 1942, Harvard University		A.B. 1942, University of Maryland	
John Panna Craven	Md.	Edward Thomas Means, Jr.	D.C.
B.S. in C.E. 1946, Cornell University		A.B. 1941, Duke University	N.C.
M.S. & C.E. 1947, California Institute of Technology		John Rowe McLean	
Ph.D. 1941, University of Iowa		A.B. 1941, University of North Carolina	
Steven Crikawa	Va.	William Wadsworth Mumby	Va.
A.B. 1946, University of Massachusetts		B.S. & M.E. 1946, Illinois Institute of Technology	
Edward Robert Darrach	Va.	John Tabor Noyes	D.C.
A.B. 1942, Pennsylvania State University	H.C.	A.B. 1942, University of Washington	
James A. Decker		Edward Anthony Palumbo	Md.
A.B. 1941, Washington and Lee University		A.B. 1941, University of Maryland	
Thomas Francis Donahue	Va.	Alexander Pallas	Md.
A.B. 1941, University of Wisconsin		B.S. 1941, University of Maryland	
John Melvin Edwards	Va.	Mary Az Palumbo	Pa.
B.S. in E.E. 1942, Northwestern University		A.B. 1941, Lakewood Valley College	
Robert William Gammey	Va.	A.M. 1941, Pennsylvania State University	
A.B. 1941, University of Virginia		George John Patton	Mass.
James Gammey	N.Y.	A.B. 1941, Syracuse University	
B.S. in M.E. 1941, University of Buffalo		Donald Herbert Pomeroy	Va.
Charles William Gery	Conn.	B.S. 1941, University of Florida	
A.B. 1941, M.D. 1947, Stanford University		Ralph Rouse	Wash.
Henry Young Hammond	Utah	A.B. 1941, University of Washington	
A.B. 1941, University of Utah		Richard Valentin Rulmer	Md.
Yusef H. Harter	Hawaii	B.S. in E.E. 1942, University of Washington	
A.B. 1941, University of Hawaii		Seymour Roskoff	Ohio
John H. Head	Va.	B.S. in M.E. 1941, Case Institute of Technology	
A.B. 1941, University of Louisville		Charles Edward Sanborn	Va.
M.D. 1941, University of Vermont	W.Va.	A.B. 1941, The George Washington University	
Robert Plummer Henshaw		Howard Lee Smith	N.Y.
B.S. in B.A. 1941, West Virginia State College		A.B. 1941, The George Washington University	
Charles John Hildebrand, Jr.	Va.	John Louis Sotolongo	Va.
B.S. & C.E. 1942, Michigan College of Mining and Technology		B.S. 1942, Cornell University	Mich.
John Ross Hughes, Jr.	D.C.	David Richard Small	
B.S. in E.E. 1942, Virginia Military Institute		P. Eng. 1941, University of Michigan	
Stanley Robert Lamb	Md.	M.S. in Eng. 1942, Massachusetts Institute of Technology	
A.B. 1941, University of Maryland		Charles Stewart Sorenson	Mont.
Robert Lee Kaler	D.C.	A.B. 1941, New Mexico Highlands University	
A.B. 1941, The George Washington University			

William Frederick Sommer, Jr. B.S. in M.E. 1928, Purdue University	Va.	Frank Tokio Takao A.B. 1937, University of Hawaii	Hawaii
Claron Chipman Spencer A.B. 1954, The George Washington University	Utah	James Franklin Walker B.S. 1949, Hampton Institute	N.C.
Joel Stearns A.B. 1920, New York University	Md.	Carl Gwynne Ward A.B. in B.A. 1954, West Virginia University	W.Va.
Harvey Bert Steenberg A.B. 1953, The George Washington University	Md.	Howard Hampton Woodworth B.S. 1942, University of Minnesota	Md.
Mary Paul Stevens B.S. 1949, Hampton Institute	N.Y.	Robert Frederick Zeim B.S. in C.E. 1951, Michigan College of Mining and Technology	Mich.

JUNE 4, 1958

Richard Comfort Allen A.B. 1920, Knox College	Va.	John Bernson Evans A.B. 1951, University of Virginia	Va.
Paul James Amick B.S. in M.E. 1952, Purdue University	Va.	Franklin Morris Everett B.S. 1949, The George Washington University	D.C.
Raymond Nicholas Baker B.S. in E.E. 1948, U. S. Naval Academy	Pa.	Salvatore Louis Eason A.B. 1946, Duquesne University	Pa.
Thomas William Bigham B.S. 1941, Virginia Polytechnic Institute	Va.	Richard Heath Ferguson III A.B. 1943, St. Vincent College	Pa.
Felix Carter Biss A.B. 1953, Western Maryland College	Md.	Robert George Flock A.B. 1954, Pennsylvania State University	Va.
Russell Evans Bond, Jr. A.E. 1941, Washington Missionary College	Md.	William George Fonger, Jr. B.S. 1948, Lehigh Institute of Technology	N.J.
Harvey Clinton Bologers, Jr. A.B. 1947, Grove City College	Pa.	Kenneth Stephen Fowler A.B. in E.E. 1943, The George Washington University	D.C.
Ainsworth Howard Brown A.B. 1949, Georgetown College	Md.	M.M. 1948, Catholic University of America	
Joseph Aaron Caldwell B.S. 1949, University of South Carolina	S.C.	Clyde Douglas Frame A.B. 1948, Washington Missionary College	Md.
Philip Canale B.B.A. 1948, College of the City of New York	N.Y.	Peter Glaser B.S. in E.E. 1949, Fairham University	D.C.
John Leslie Carmichael, Jr. A.B. 1951, Vanderbilt University	Ala.	Marvin Arthur Galloway A.B. 1949, B.S. in E.E. 1950, Pennsylvania State University	Pa.
AM. 1950, Columbia University		Seth Hani A.B. 1944, University of Hawaii	Hawaii
Edgar Donald Calkins A.B. 1942, Western Maryland College	Va.	Richard Kelly Harker A.B. 1951, University of Arizona	Ariz.
John Webster Carter A.B. 1941, Kent State University	D.C.	Timothy Lee Harter A.M. 1941, Central College	Va.
Edward Alfred Cawley, Jr. B.S. 1940, Oregon College	D.C.	Ronald Hyde B.S. 1941, University of Maryland	Pa.
M.S. 1944, Ph.D. 1947, Pennsylvania State University		William Thomas Lane, Jr. A.B. 1945, University of South Carolina	Md.
Neil John Conway B.S.S. 1949, Georgetown University	Md.	Stephen Lester Lamm A.B. 1955, Clark University	Va.
Charles William Crump, Jr. B.S. in E.E. 1949, University of Pittsburgh	Va.	Danforth J. Lee A.B. 1943, The George Washington University	Md.
Max A. Michael Cruser A.B. 1948, Pennsylvania State University	Pa.	Andrew Richard Jellard B.S. in M.E. 1946, University of Buffalo	W.Va.
Matthew Joseph Cullen, Jr. A.B. 1946, Harvard University	N.H.	Daniel Jose Karp A.B. 1941, West Virginia University	Utah
Daniel McGilchrist Cunniff A.B. 1941, University of Michigan	Mass.	Walter Walton Karp B.S. 1944, University of Utah	Utah
Michael Scott Custer (Washington)	Md.	Sherron Leland, Jr. A.B. 1942, University of California	D.C.
B.S. in B.A. 1948, Georgetown University		Laurance Leyman B.S. in C.E. 1958, Washington and Lee University	Md.
Daniel DeAntonio B.S. 1948, University of Buffalo	N.Y.	Lee Clinton Light A.B. 1946, Princeton College	Va.
Malcolm Faith Dugdale A.B. 1941, The George Washington University	Md.	Lincoln James Mc Manus A.B. 1948, Hobart College	
Harold Arthur Dixon B.E. 1944, New York University	N.Y.		
Russell Herman Dunning B.S. 1949, Rutgers University	Va.		
Jack Warren Edwards B.S. in C.E. 1948, Oregon State College	Ore.		

Harry Francis Malske II B.S. 1951, Washington and Lee University	N.J.	Richard John Ragan A.B. 1951, Ohio University	Ohio
Albert Matthews A.B. 1954, University of Nevada	Nev.	Darrell George Remick B.S. 1955, University of Utah	Utah
Thomas Edward Medeson B.B.A. 1946, University of Miami	Mass.	Kenneth Norman Rogers B.S. 1954, Ohio State University	N.Y.
Irwin Wilbourn Mullen B.S. in C.E. 1959, Massachusetts Institute of Technology	Va.	Frank Joseph Saff, Jr. B.S. in B.A. 1952, University of Nevada	Nev.
Robert John Modski B.S. in B.A. 1950, Syracuse University	Va.	Margaret Belnick Schuman A.B. 1955, The George Washington University	D.C.
Irma Philip Morris A.B. in Govt. 1953, The George Washington University	Md.	John Howard Shadle III A.B. 1942, Williams College	Va.
Theodore Albert Munter A.B. 1954, Bucknell University	D.C.	Robert Francis Silver A.B. 1953, University of Virginia	Mont.
George Robert Ochoa A.B. 1955, University of Bridgeport	Conn.	William Anthony Todd, Jr. B.S. 1954, M.S. 1957, University of Notre Dame	N.Y.
A.M. 1953, New York University			
Hugh Thomas O'Reilly B.S.S. 1954, Georgetown University	D.C.	Richard Gordon Troop B.S. 1952, University of New Hampshire	Va.
Joseph Parizotto A.B. 1955, The George Washington University	N.J.	George William Yarus A.B. 1951, College of William and Mary	Va.
John N. John Papamann A.B. 1955, University of Delaware	Va.	William Tamm Watkins A.B. 1950, The George Washington University	Fla.
Edward Andrew Parker B.S. S.E.E. 1950, University of Illinois	Va.	Robert Carlyle Watson A.B. in Govt. 1953, The George Washington University	Va.
Edgar Eugene Plummer A.B. 1954, Wheaton College	Calif.	Lyle Marion Wainman, Jr. A.B. 1955, The George Washington University	Va.
John Theodore Powell A.B. 1950, University of Washington	Va.	Cedward Lawrence Water B.S. 1952, University of Maryland	Md.
Richard Marford Raboin B.E.E. 1950, Cornell University	Va.		

OCTOBER 18, 1958

Thomas Graham Bell B.S. in B.A. 1950, University of Nevada	Nev.	Paul Joseph Mason A.B. 1953, Brooklyn College	Md.
Chandler Davis Blazer A.B. 1955, The George Washington University	Mo.	A.M. 1954, Harvard University	
Stanley Lew A. Bregman A.B. 1956, The George Washington University	Va.	Orlando Maria Antonino Neumann B.S. in G.S. 1951, St. Louis University	Mo.
Kenneth Brewster Coulter A.B. 1950, Princeton University	D.C.	Robert Bruce Norris A.B. 1954, University of Virginia	D.C.
Roger Wayne Foxson B.S. in M.E. 1950, University of California	Va.	John Mayhew Plummer B.E.E. 1942, New York University	D.C.
Douglas Lee Fayre B.S. 1952, University of Illinois	Ill.	Daniel Medford Franklin III B.S. 1950, Morgan State College	D.C.
Daniel Conrad Fox B.S. in E.M.E. 1952, Purdue University	Va.	Duffey Thomas Ready A.B. 1954, Norwich University	D.C.
Albert Eugene Fox B.S. in E.M.E. 1953, University of Michigan	Mich.	Robert Raymond Redburn B.S. in E.E. 1951, University of Michigan	Mich.
Robert Carl Foutzauer A.B. in Govt. 1951, The George Washington University	Va.	John Turley Rizzo B.S. in M.E. 1950, University of California	Mo.
John Allen Galt B.S. 1951, University of Maryland	Md.	John Harold Skarson A.B. 1955, Princeton University	Md.
George Marion Good A.B. 1952, Emory University	Fla.	Vernon Jerome Slone, Jr. A.B. 1953, Western Kentucky State College	Ky.
Alvin Hugh Harrison, Jr. A.B. in Govt. 1954, The George Washington University	Va.	Michael James Smith A.B. 1947, A.M. 1951, University of Texas	Va.
Marion Frank Hesseman B.S. 1951, Ohio State University	Va.	Robert Meigs Van Horn A.B. 1950, The George Washington University	Mo.
Ph.D. 1956, University of Illinois			
Linus Julian Hyde, Jr. A.B. 1954, Brigham Young University	Utah	Joseph Earl Ward A.B. 1954, University of Nevada	Nev.
		James Wooten A.B. 1951, Virginia Military Institute	Va.
		John Edmund Zahm, Jr. A.B. 1955, Muncie College	Va.

BACHELOR OF LAWS IN NATIONAL UNIVERSITY

FEBRUARY 22, 1958

Edward Kilroe Burns

A.B. 1947, University of Notre Dame

Md

Phillip Henry Jones

Va

JUNE 4, 1958

Edward Stanley Kidd, Jr.

Va

JURIS DOCTOR

FEBRUARY 22, 1958

Christopher Stephen Changaris	Fla	Earle Westgate Putnam	Va
B.S. 1946, U. S. Coast Guard Academy		A.B. 1950, Dartmouth College	Fla
Harvey Gubetz	N Y	Howard Stowe Roberts	
A.B. 1944, Harper College		B.S. in M.E. 1956, Purdue University	Va
Upton Keller Guthrie	D.C.	Karl Irvin Salzberg	
A.B. 1952, The George Washington University		B.S. 1952, Cornell University	Kan
Douglas Allen Kahn	N C	Charles Wayne Thompson	
A.B. 1955, University of North Carolina		A.B. 1955, College of Emporia	D.C.
Paul Charles Kozov	Texas	Robert Oscar Wells, Jr.	
B.S. in Ch.E. 1948, University of Texas		A.B. 1952, The George Washington University	Mich
Harold Levine	Va	John Leslie White	
B.S. in C.E. 1954, Purdue University		A.B. 1948, M.S. 1949, Kalamazoo College	Md
Eugene Mayer Maslin	D.C.	John Jesse Yarow	
A.B. 1952, University of Maryland		A.B. 1951, The George Washington University	
Charles Edgar Martin	Nebr.		
B.S. 1951, U. S. Coast Guard Academy			

JUNE 4, 1958

Kenneth George Andersson	N C	Louis Thomas Guthrie	Pa
A.B. 1954, University of North Carolina		A.B. 1951, M.S. 1952, Pennsylvania State University	N.M.
Gene Arlan Beutzel	Kans.	Frederick Brigham Howden III	
B.S. 1954, McPherson College		A.B. 1955, University of New Mexico	W.Va
Paul Harold Branstetter	N Y	William Raines Judy	
B.S. 1947, Columbia University		B.S. in E.A. 1955, Fairmont State College	Iowa
Donald Deane Bushon	Va	Joseph Winston Kimmom	
B.S. in C.E. 1950, University of Wisconsin		B.S. 1954, McPherson College	Hawaii
Arthur Livingston Branning	Va	Davis Hoy-Chun Lee	
B.E. 1952, Georgia Institute of Technology		A.B. 1951, University of Hawaii	Va
William James Catchlow III	Utah	Davis McManis	
A.B. 1955, The George Washington University		A.B. 1951, University of Vermont	N.J.
Karl Ernst Davis	Md	John Henry Mion	
A.B. 1951, Hampden-Sydney College		P.S. in E.E. 1953, Rutgers University	Va
John Philip Dellart	Va	Michael Fendler Ottman, Jr.	
B.S. in E.E. 1950, Iowa State College of Agriculture and Mechanic Arts		A.B. 1950, Johns Hopkins University	Va
Alfred Charles Doherty	Va	Stanford Elmer Parrin	
A.B. 1955, The George Washington University		B.S. 1950, University of Illinois	Iowa
Leif N. Edquist	Utah	Neal Irvine Smith	
P.S. 1950, University of Utah		B.S. 1951, Iowa State College of Agriculture and Mechanic Arts	Va
William Lars Felson	Md	James Daniel Stokes, Jr.	Idaho
B.S. in I.M.E. 1951, University of Michigan		B.S. in E.E. 1951, Tulane University	Fla
Frederic George Gode	Minn.	Geoffrey Salsoway Thatcher	
A.B. 1945, A.M. 1951, American International College		B.S. 1954, Ricks College	
		George Frank Wilsey, Jr.	
		B.S. 1951, Florida State University	

OCTOBER 18, 1958

William Frederick Reemer A.B. 1952, Oregon College A.M. 1954, Clark University Graydon Nelson Bentz B.S. 1952, A.M. 1954, University of Kansas	Va	George Joseph Lebowitz B.S. 1953, College of the City of New York	Md
Marion Patton Echols, Jr. B.S. in C.E. 1948, Virginia Military Academy	Kans	Carl George Love A.B. 1949, College of Wooster	Va
James Joseph Flood, Jr. A.B. 1951, University of Notre Dame	Va	Jay Thomas I. 42 B.S. 1946, University of Nebraska A.M. 1949, University of Denver	Colo.
	N Y	John Charles Vassil B.S. in C.E. 1953, Carnegie Institute of Technology	Ohio

MASTER OF LAWS

FEBRUARY 22, 1958

Peter D. Betes A.B. 1947, West Virginia University LL.B. 1947, National University	W Va	William Lewis M. Pirov A.B. 1944, LL.B. 1945, University of Alabama	Ala
William Adrian Coonradie B.E.A. 1944, University of Georgia LL.B. 1949, St. John's University	Va	Robert Milton Seemelt B.B.A. 1951, M.P.A. LL.B. 1954, University of Maryland	Mich
Louis Joseph DeRosa B.B.A., LL.B. 1954, Tulane University	Va	Jennings Talbot Smith A.B. 1950, LL.B. 1951, The George Washington University	D.C.
Howard Lawrence Kitzmiller A.B. 1951, LL.B. 1954, Dickinson College	Pa		

JUNE 4, 1958

Norman Duran Alexander, Jr. B.B.A. 1954, LL.B. 1956, University of Oklahoma	Va	Alfred Ramier Reiser LL.B. 1952, American University A.B. in Govt. 1951, The George Washington University	Md
Harry Charles Burgess A.B. 1950, LL.B. 1957, Syracuse University	N Y	Vernon Louis Rasmussen Diploma in Law 1943, LL.M. 1945, University of Texas, Austin	Md
Emerson Henry Feldman A.B. 1954, LL.D. 1957, The George Washington University	Md	Deming, 1945, University of Iowa, Iowa City	
William Paul Gaudin A.B. 1945, San Jose State College A.M. 1951, University of Southern California	Calif	M.C.V. (Am. Pol. Sci.), The George Washington University	
Philip 1952, University of Denver LL.B. 1957, The George Washington University		Frederick T. Smith B.S. 1944, California Institute of Technology LL.D. 1957, The George Washington University	Va
Robert Alexander Kincaid B.S. 1948, Hamilton-Snyder College LL.B. 1954, The George Washington University	W Va	Charles Arthur Senter LL.B. 1948, University of Kentucky	Md
Ruben Mack Moore B.S. 1952, LL.B. 1956, University of Utah	Utah	Stuart Joseph Waller B.S. 1945, Fordham College LL.B. 1948, Miami University	Ill

OCTOBER 18, 1958

Malcolm Albert Laman B.S. in M.P. 1951, Pacific University LL.B. 1957, University of Kansas City and William Mayer B.S. 1954, LL.B. 1957, University of Kentucky	Mo	Geoffrey Maxine Van Sanford A.B. in Govt. 1951, LL.D. 1954, The George Washington University	D.C.
	Md		

MASTER OF COMPARATIVE LAW**FEBRUARY 22, 1958**

Raoul Gheorghiu Va
 LL. B. 1952, University of Bucharest,
 Romania
 LL. D., Ph.D. 1951, University of Paris,
 France

MASTER OF COMPARATIVE LAW (AMERICAN PRACTICE)**FEBRUARY 22, 1958**

Romulo Alza Manriquez Philippines
 LL. B. 1952, Far Eastern University,
 Philippines

JUNE 4, 1958

Jan Maria Wunsch D.C.
 LL. D. 1956, Charles University,
 Czechoslovakia

DOCTOR OF JURIDICAL SCIENCE**FEBRUARY 22, 1958**

Irving Ladimer N.Y.
 A.B. 1915, College of the City of
 New York
 J.D. 1946, The George Washington
 University
 Dissertation: "Legal and Ethical
 Implications of Medical Research
 on Human Beings"

JUNE 4, 1958

David Hottenstein Va
 A.B. 1922, Western Maryland College
 J.D. 1927, LL.M. 1930, The George
 Washington University
 Dissertation: "Military Jurisdiction
 over Persons not in Uniform"

STUDENTS REGISTERED IN THE LAW SCHOOL

SPRING 1958, SUMMER 1958, FALL 1958

A

Abell, Tyler
A.B. 1954, Amherst College
Abland, Charles David
B.B.A. 1952, LL.B. 1954, University
of Oklahoma
Ables, Wendley, Peyton
B.S. 1954, University of Utah
Adair, Warren, James
A.B. 1944, University of Pennsylvania
Adams, Harold Wallace
B.S. in LL.B. 1954, Purdue University
Adams, Anthony
J.D. 1951, University of Palermo
LL.M. 1954, McGill University
Adams, Victor, Jr.
LL.B. 1957, University of Hawaii
Adams, Alan Dayton
B.S. 1957, University of Kansas
Adair, Gene Edward
B.C.E. 1957, Rensselaer Polytechnic
Institute
Alexander, Norman Dutton, Jr.
B.B.A. 1952, LL.B. 1956, University
of Oklahoma
Allen, William Curtis
B.S. 1952, M.B.A. 1957, American
University
Allen, Richard Comfort
A.B. 1951, Knox College
Alpert, Robert Frederick
B.S. in LL.B. 1957, Virginia Polytechnic
Institute
Anderson, Charles Thomas
A.B. 1957, Southern Illinois University
Anderson, Kenneth George
A.B. 1953, University of North
Carolina
Anderson, Marvin
B.S. 1951, M.S. 1954, The George
Washington University
Anderson, Richard, Bruce
B.S. 1957, South Dakota State College
Anderson, Orla
B.S. in M.L. 1955, Illinois Institute
of Technology
Anderson, Donald Ralph
B.S. in LL.B. 1957, Purdue University
Armstrong, Robert IV
A.B. 1958, University of Oklahoma
Armstrong, Thomas James
B.S. 1957, Lebanon Valley College
Armstrong, Robert Freeman
B.S. M.S. 1958, University of
Mississippi
Armstrong, Sanford
B.S. in Ch.E. 1958, Purdue University
Armstrong, Frank David
B.S. in M.E. 1957, University of
Mississippi

Auerbach, Ernest Siegmund
A.B. in Govt. 1959, The George
Washington University
Aurbach, Paul James
B.S. in Met. Eng. 1952, Purdue
University
Avera, Reginald Lee
B.S. 1957, Bowling Green College of
Commerce
B
Baker, Philip Tribbena
A.B. 1958, Stanford University
Bagnett, William Keefe
B.S. in LL.B. 1957, West Virginia
University
Baker, Thomas Anna
A.B. 1957, LL.B. 1958, The George
Washington University
Baker, Gerald Franklin
A.B. 1957, LL.M. 1959, Lewis and
Clark College
Baker, Raymond Nicholas
B.S. in LL.B. 1957, U.S. Naval Academy
Baldwin, Willie Eugene
Ph.D. 1957, Yale University
LL.B. 1958, Detroit College of Law
Baker, Donald Raymond
A.B. 1957, Indiana University
Bard, David Seaborn
B.S. 1958, University of Maryland
Bartlett, Thomas William
B.S. 1953, Virginia Polytechnic
Institute
Barnes, Ralph Gregory
B.B.A. 1954, University of Pittsburgh
Bart, Richard Allen
B.A. 1957, Purdue University
Bassett, Samuel Louis
P.S. in Ch.E. 1955, Drexel Institute
of Technology
Bates, Veda Marie
A.B. 1957, University of Idaho
Bates, Edwin Carter
A.B. 1951, Western Maryland College
Batterson, Walter Lawrence
A.B. 1950, The George Washington
University
Bayer, John
M.A. in Law 1954, Istanbul University
Turkey
Baze, Arthur Herbert
A.B. 1958, Catholic University of
America
Beattie, James Wendell
A.B. 1958, Guilford College
A.M. 1959, University of Pennsylvania
Beckwith, Charles Leo
B.S. 1957, University of New
Hampshire
Beckwith, Gene Allen
B.S. 1954, McHenry College
Md.
Va.
Md.
Calif.
W Va.
D C.
Va.
Pa.
Va.
Ind.
D C.
Va.
W Va.
Ind.
Pa.
Idaho
Md.
D.C.
Turkey
Gram
Va.
Md.
Kans.

Becker, George Dennis A.B. 1926, Swarthmore College	Mid	Blanch, Francis James, Jr. A.B. 1929, The George Washington University	Va
Beckett, Robert Lee A.B. 1927, M.S. 1925, University of Colorado	D.C.	Blanchard, Albert Clark A.B. 1928, Yale University	Mass
Beckwith, Horace Palmer A.B. 1921, Maryville College	N.J.	Blasgen, Paul Harold A.S. 1931, Columbia University	N.Y.
Beemer, William Fendley A.B. 1922, Ursinus College	Va	Bloch, Samuel Herman B.S. 1925, Brooklyn College	D.C.
A.M. 1924, Clark University		Bloch, Rachel Edwin A.B. 1923, University of Georgia	Ga.
Belton, Yvonne Huguette Licence es Lettres 1929, University of Bordeaux, France	Mid	Black, Daniel Gordon B.S. 1927, Texas College of Arts and Industries	Va
Bell, Harry Clark B.S. 1927, Georgetown University	N.Y.	Bodolan, Carl Theodore A.B. in Govt. 1923, The George Washington University	Pa.
Bell, Thomas Graham B.S. in B.A. 1920, University of Nevada	Nev.	Bolton, Jack Lee B.Mus. Eng. 1926, Conservatoire National, Paris	Va
Beller, Margaret Anne A.B. 1923, A.M. in Ed. 1927, The George Washington University	Mid	Bond, Russell Evans A.B. 1931, Washington Missionary College	Mid
Beltran, Howard B.S. in C.E. 1926, Purdue University	Va	Bond, Reno Elwood A.B. 1923, University of Pittsburgh	D.C.
Benson, Dan Homer A.B. 1923, University of Texas	Texas	Borner, Aaron Earl B.B.A. 1926, Golden Gate College	D.C.
Benton, Gaylord Nelson B.S. in B.A. 1921, University of Kansas	Kans.	Boston, Donald Francis B.S. in C.E. 1923, University of Wisconsin	Va
Berd, Robert Henry B.S. 1927, State University of Iowa	Iowa	Boston, Thomas Ray B.S. 1925, University of Kansas	Va
Bernard Hugh Yancey, Jr. A.B. 1921, University of Georgia	Va	Boutwell, Arthur Edward, Jr. B.S. in B.A. 1923, University of Florida	Pa.
B.S. 1927, California University		Bowman, Thomas Devane A.B. 1923, University of Maryland	Mid
Berstein, Alan Herbert B.S. in C.E. 1925, Drexel Institute of Technology	Pa.	Bowen, Francis John Andrew A.B. 1921, Dartmouth College	Pa.
Berenson, Saul Henry B.S. in C.E. 1927, University of Maryland	D.C.	Bowen, Robert Patrick B.S. in Pet. Eng. 1927, M.S. in Pet. Eng. 1928, Pennsylvania State University	Pa.
Berd, Lawrence Herbert B.S. 1927, Drexel Institute of Technology	N.J.	Boyd, Lester Joseph A.B. 1926, Duke University	Pa.
Bert, Robert Ellis B.B.A. 1924, University of Oklahoma	Va	B.S. 1926, U.S. Merchant Marine Academy	Mo.
Best, Stephen Lewis A.B. 1923, Kenyon College	Mid	Bradley, Robert Barton B.S. in E.E. 1926, University of Missouri	W.Va.
Beter, George A.B. 1927, Marshall College	W.Va.	Bradley, Thomas A.B. 1923, Dartmouth College	Utah
Bethers, Paula Gordon B.S. 1926, Brigham Young University	Utah	Bradley, Arthur Livingston B.E.E. 1922, Georgia Institute of Technology	Wis.
Bowler, Erico Albert, Jr. B.S. in M.E. 1926, Northwestern University	Wis.	Bratman, Aubrey Dea A.B. 1924, Queens College	Colo.
Bingman, Samuel David, Jr. A.B. 1923, College of Emporia	Colo.	A.M. 1925, Manhattan College	Va
Bisler, Harold Russell A.B. 1925, Missouri State University of Agriculture and Applied Science	Va	Brown, Stuart Lee B.E.S. 1927, Johns Hopkins University	Mid
Black, John Woodford A.B. 1927, University of Washington	Mid	Brumman, Stanley Lewis A.B. 1927, The George Washington University	Fla.
M.A. 1929, Columbia University		Brutke, Donald Gene B.S. in E.E. 1926, South Dakota School of Mines and Technology	Fla.
Blackburn, Charles Boyd A.B. 1923, Florida Southern College	Fla.	Brown, William Burton A.B. 1927, The George Washington University	Mo.
Blanton, Charles David A.B. 1923, The George Washington University	Mo.	Brown, Edwin Charles A.B. 1927, Idaho State College	Idaho
Blair, Charles Hildreth B.M.E. 1923, Cornell University	Va	Brown, Kenneth Jay A.B. 1923, LL.B. 1926, Harvard University	N.Y.
Blakelee, Ralph David A.B. 1927, Michigan State University of Agriculture and Applied Science	Va		

Breston, Michael Penow B.S. 1958, University of Maryland	Md.	Buttermark, Robert James A.B. 1946, Rutgers University	Va.
Brodens, Burton Gouffart A.B. 1941, State University of Iowa	Va.	Byrd, John Henry, Jr. B.S. 1952, U.S. Coast Guard Academy	Conn.
Brogens, Harcus Cushman A.B. 1951, Green City College	Pa.	Byrne, Kenneth August A.B. 1949, Colorado State College of Education	Colo.
Brogens, Alfred Francis, Jr. B.S. 1954, U.S. Coast Guard Academy	Mass.		
Brosky, Thomas Aaron B.L.S. 1952, Villanova University	Va.	A.M. in Govt. 1943, The George Washington University	
Brook, Lawrence Anthony A.B. 1950, LL.B. 1955, Western Reserve University	Md.	Byron, Caroline Edgar A.B. 1941, University of Virginia J.D. 1943, The George Washington University	Md.
Brodz, Alfred Lawrence B.S. in E.E. 1946, Northeastern University	Mass.		
Brothark, Arthur Francis A.B. 1954, Maryland Seminary	D.C.	C	
Brouer, Alban Emerson A.B. 1941, The Citadel	Md.		
Brown, Gilbert Thomas B.S. in B.A. 1949, University of Florida	Va.	Cachera, James Chris B.S. 1958, University of Pennsylvania	D.C.
Brown, Anselbert Howard A.B. 1953, Gettysburg College	Md.	Caffrey, Charles Augustine A.B. 1952, Wake Forest College	Pa.
Brown, Grover Cleveland A.B. 1947, University of North Carolina	Va.	Cahill, John Joseph B.S. 1956, University of Pennsylvania	Pa.
Brown, Theodore Locke A.B. 1947, Colby College	Md.	Cahill, William Charles B.L.E. 1941, B.M.E. 1946, University of Akron	Va.
Brown, William M. Cornick A.B. 1956, Duke University	Del.	Calhoun, Joseph Allen B.S. 1944, University of South Carolina	S.C.
Brown, Mona Cornicker A.B. 1950, Trinity College	Va.	Calhoun, Thomas Francis B.S. in L.L. 1947, University of Pennsylvania	Pa.
A.M. 1952, Catholic University of America	Md.	Cambridge, James Jr. B.S. in E.E. 1950, University of California	Va.
Brown, Leonard Carvel B.C. in B.A. 1946, Georgetown University	Md.	Camphill, Lawrence Ray B.S. in B.A. 1947, University of Akron	D.C.
Brown, William Edward B.S. 1948, University of Michigan	Idaho	Camphill, William Goodman B.S. 1950, University of Nebraska	Idaho
Brown, Edmund B.L.S. 1950, The George Washington University	Mich.	Casby, Thomas Vallery, Jr. A.B. 1944, University of Virginia	Md.
Brown, Ronald Sutton IV A.B. 1958, University of Maryland	Md.	Cassidy, Eugene Paul B.S. 1950, University of Kentucky	Ohio
Brown, Joseph Jay B.S. 1954, Brigham Young University	Mont.	Cassidy, Ross Warren A.B. in B.A. 1941, LL.B. 1947, Montana State University	Mont.
Brown, Lawrence Zimmerman A.B. 1947, University of Maryland	Idaho	Cassidy, Jay M. B.S. in E.E. 1947, A.B. 1947, University of Pennsylvania	Pa.
Brown, John M. Daniel A.B. 1950, Pomona College	Md.	Casper, Anna Marie A.B. 1947, The George Washington University	D.C.
M.E.A. 1950, Harvard University	D.C.		
Brown, Harry Charles A.B. 1941, LL.B. 1947, Syracuse University	N.Y.	Casson, Philip B.B.A. 1940, College of the City of New York	N.Y.
Brown, Joseph Patrick A.B. 1950, Marquette University	D.C.	Casson, Paul James B.S. in B.A. 1957, University of Idaho	Wash.
Brown, James Leonard B.S. in E.E. 1947, Pennsylvania State University	Pa.	Casson, Marion Ann A.B. 1947, The George Washington University	N.Y.
Brown, George James A.B. 1950, Union College	N.J.	Casson, John Leslie, Jr. A.B. 1947, Vanderbilt University	Va.
Brown, Lawrence Arthur, Jr. B.L.S. 1950, University of Delaware	Va.	Casson, Laurence Joseph B.S. 1950, Utah State University	D.C.
Brown, George Dawson A.B. 1950, Brigham Young University	Utah	Casson, Arthur B.S. 1941, Syracuse University	N.Y.
Brown, Robert Edward A.B. 1950, Bowling Green State University	Ohio	Casson, John Francis B.S. in M.E. 1947, Northeastern University	Mass.
Brown, David Martin A.B. 1950, Temple University	Md.	Casson, William Olin A.B. 1947, The George Washington University	Va.

Carr, Eugene Leonard	Utah	Utah, Noel Samuel	Va
A.B. 1932, University of Utah		B.S. in Comm. 1932, University of	
Carson, James Berkley	Md	Vassar	
A.B. 1941, A.M. 1945, University of		Gold, Allen Elmer	Pa
Maryland		B.S. 1914, Bowling Green State	
Carvoun, Percy	Ill	University	
B.S. 1925, The George Washington		Gold, Paul Maxwell	Pa
University		B.S. 1927, M.S. 1928, Massachusetts	
Carter, Harry S.	Va	Institute of Technology	
A.B. 1923, College of William and Mary		Goldman, Milton F. Howard	Pa
Casper, Maria Herbert	D.C.	B.Pet. Eng., M.S. 1953, Ohio State	
A.B. 1928, The George Washington		University	
University		Goldman, Edgar Donald	Va
Cass, Nathan	Md	A.B. 1927, Western Maryland College	
B.F. 1922, New York University		Goldman, F. (F.) Russell	
L.B. 1916, The George Washington		B.S. in M.E. 1928, University of	
University		Michigan	
Cassidy, John Robert	Va	Gold, Anne	Va
B.S. 1912, Pennsylvania		A.B. 1913, Brooklyn College	
Military College		Gold, Jerry	Pa
Cassidy, Thomas Kilder	Wyo	B.S. in M.E. 1927, Rensselaer	
B.S. 1923, University of Wyoming		Polysiphon Institute	
Cassidy, Lincoln Perry	N.Y.	Gold, Stanley Howard	
B.S. 1929, Webb Institute of Naval		B.S. 1923, Drexel Institute of	
Architecture		Technology	
Cass, Peter Michael	Pa	Gold, Leonard Earl	
B.S. 1912, University of		A.B. in Geol. 1920, The George	
Pennsylvania		Washington University	
Centola, David Daniel	Md	Gold, John Edgar	
B.S. 1922, Potomac University		B.S. 1943, D.C. Teachers College	
George, Peter And	D.C.	College of Education	
A.B. 1911, The George Washington		B.F. 1911, University of Detroit	
University		College	
Chambers, Milton Kay	W.Va	B.S. 1922, U.S. Naval Academy	
A.B. 1927, West Virginia University		L.B. 1928, L.M. 1929, The George	
Chambers, Noel Andrew	D.C.	Washington University	
B.S. 1922, Georgetown University		Coleman, James Henry, Jr.	
Charles, Walter Theodore	Md	A.B. 1929, Virginia State College	
B.S. 1924, University of Maryland		Coleman, James Henry, Jr.	
Charles, William Ross	N.M.	Coleman, Robert Lee	
B.A. 1912, University of New		B.S. 1928, U.S. Naval Academy	
Mexico		College	
Chesley, Alan William	Vt	B.S. in C.E. 1927, Texas Western	
B.S. 1925, New England College		College	
Chidley, George Thomas	Okla.	Coleman, George Matthew	
B.S. 1923, Oklahoma Agricultural		B.S. in C.E. 1923, Virginia University	
and Mechanical College		Coleman, Charles William	
Childress, Richard Harvey	Ill	A.B. 1923, Boston University	
B.S. 1923, U.S. Naval Academy		Coleman, Arnold Thomas	
Childs, Rufus Henry	Ohio	B.S. 1923, L.B. 1926, Fordham	
B.S. in M.E. 1922, Purdue University		University	
Chis, Gay	Va	Coleman, Anne Beatrice	
B.S. in M.E. 1927, Oregon State College		A.B. 1928, Northwestern University	
Chiswick, Philip	Thailand	Coleman, Neil Ross	
L.B. 1924, University of		A.B. 1923, Cornell College	
Phnom Penh, Thailand		Coleman, John William	
Chiswick, Gordon A.	Va	A.B. 1923, State University	
B.S. 1923, L.B. 1925, University		Coleman, Paul Joseph	
of Ohio		B.S. in E.E. 1923, Case Institute of	
Chiswick, John Jr.	Va	Technology	
A.B. 1926, University of Pittsburgh		Coleman, John Taylor	
Clark, David Arthur	Wash	A.B. 1928, Drexel Institute of	
A.B. 1927, University of Washington		Technology	
Clark, Barry Leonard	Ill	Coleman, Benjamin Franklin	
B.S. in M.E. 1926, Northwestern		B.S. 1927, Dickinson College	
University		Coleman, Elmer F. Allen, Jr.	
Clarke, Malcolm Douglas	Va	B.S. 1922, Queens College	
L.B. 1923, American University		M.S. 1923, Ph.D. 1926, Pennsylvania	
Clay, Robert Elmer	Ky	State University	
B.S. in Comm. 1927, University of		Conway, Neal John	
Kentucky		B.S.S. 1923, Georgetown University	
		Cook, Joseph Allen	
		A.B. 1921, University of Maryland	

Coke, Joseph Allan B.S. in C.E. 1937, Drexel Institute of Technology	Pa.	Cooker, William, Chemist B.M.E. 1930, Georgia Institute of Technology	Va.
Cooper, George Madison B.S. in L.E. 1937, Pennsylvania State University	Pa.	Cooper, L.L.B. 1937, University of Louisville College of Law	Va.
Cooper, Richard Clarence B.S. 1938, Marquette College of Mining and Technology	Va.	B.S. in Gen. Eng. 1936, M.S. in C.E. 1937, University of California	N.H.
Copier, William Randolph A.B. 1934, Boston University	Colo.	Collier, Marjorie Joseph, Jr. A.B. 1936, Harvard University	Va.
Cordero, Federico Antonio A.B. 1938, University of Puerto Rico	Puerto Rico	Collier, Robert Scott A.B. 1934, Washington and Lee University	D.C.
Corn, William Stanford A.B. 1938, Dickinson College	Md.	Cummins, Lila Rose A.B. 1939, The George Washington University	N.Y.
Corry, Kelly Grant B.S. 1938, Mississippi College	Va.	Curry, Donald Charles A.B. 1938, Jefferson College	N.Y.
Courtenay, James Forest B.S. 1938, Pennsylvania State University	Va.	Curtis, David M. Clayton A.B. 1931, University of Michigan	Md.
Cornell, Ronald S. B.S. 1937, Queens College	N.Y.	Curtis, Marshall Stuart B.S. in B.A. 1935, Georgetown University	Va.
Cornwall, Ross Joseph A.B. 1938, University of Cincinnati	Va.	Cykowski, Elizabeth Ester A.B. 1931, Rutgers University	
Coulter, Kentucky Benedict A.B. 1938, Kentucky University	D.C.	D	
Cox, Arnold Simpson A.B. 1938, University of Arizona	Ariz.	Dahlstrom, John Alexander B.S. 1938, University of Utah	Utah
Cox, William Edward A.B. 1934, Brownell University	Va.	Daley, Henry Leonard A.B. 1937, Iowa University	Va.
Coleman, George H. Howard, Jr. B.S. 1938, University of Missouri	Va.	Daly, Lora MacLean B.E. 1937, Vanderbilt University	La.
Cole, Lawrence William, Jr. B.S. in E.E. 1937, University of Illinois	N.Y.	Dameron, Robert Meade, Jr. B.S. in E.E. 1937, Virginia Polytechnic Institute	Va.
Cole, Albert Deane Price A.B. 1938, Harvard University	Va.	D'Amico, Louis Joseph A.B. 1938, The George Washington University	Ohio
Cole, John Edward A.B. 1937, Indiana University	Pa.	Damon, John A. Kent, Jr. B.S. in M.E. 1938, West Virginia University	Va.
Cole, Mary Margaret A.B. 1938, Pennsylvania State University	N.J.	D'Amico, Joseph B.S. 1938, University of Buffalo	N.Y.
Cole, William Stanley A.B. 1938, Indiana University	W.Va.	Darwin, Paul Patrick B.S. 1938, American University	Puerto Rico
Cole, William Stanley A.B. 1938, West Virginia Institute of Technology	Va.	Davis, Ramon Homer A.B. 1938, Inter-American University, Puerto Rico	D.C.
AM 1938, Missouri College of Education	Md.	Davis, Allen Vincent B.C.E. 1938, University of Delaware	Mo.
AM 1938, University of Virginia		Davis, Chester Leslie, Jr. B.S. in E.E. 1937, University of Missouri	D.C.
AM 1938, University of Virginia		Davis, Herold Murray B.S. 1938, University of Maryland	Md.
AM 1938, University of Virginia		Davis, Karl Ernst A.B. 1931, Hampden-Sydney College	Utah
AM 1938, University of Virginia		Davis, Marion Harmon B.S. 1937, Utah State University of Agriculture and Applied Science	D.C.
AM 1938, University of Virginia		Davis, Thomas A.B. 1937, State University of Iowa	D.C.
AM 1938, University of Virginia		Davis, Alan Paul A.B. 1937, The George Washington University	Pa.
AM 1938, University of Virginia		DeArment, Philip Lemay B.S. in E.E. 1937, University of Pittsburgh	Va.
AM 1938, University of Virginia		DeArment, Frank Leslie A.B. 1938, College of William and Mary	

de Lant, Donald	Va	de Lant, Thomas E.	SS
A.B. 1964, Ohio University		B.S. 1969, University of South Carolina	
DeLatt, John Philip	Va	De Latt, Thomas Jay	ME
B.S. 1961, Iowa State College of Agriculture and Mechanic Arts		B.S. 1969, University of Maryland	19
De Munnig, Margaret Louise	D.C.	De Munnig, Robert Wayne	19
A.B. 1966, The George Washington University		B.F.E. 1967, University of Florida	Va
Depueux, Donald Eric	Va	DeMunnig, Robert Wayne	D.C.
B.S. 1966, Carnegie Institute of Technology		Duffy, Christopher Thomas	
Depueux, Robert Abel, Jr.	Va	B.S. 1964, Georgia Institute of Technology	19
B.C.E. 1968, Rutgers Polytechnic Institute		Depueux, Joseph Paul	19
DePaul, Albert Lucius	Md	B.S. 1969, E.B. 1968, Georgetown University	S.I.
A.B. 1969, The George Washington University		Devere, Joseph Franklin	
Depue, Samuel Henry III	Md	A.B. 1969, Pennsylvania State University	
B.S. 1969, Indiana University		Dukes, Charles Henry, Jr.	Va
Deschler, Lewis H.	Md	A.B. 1968, LL.B. 1968, Duke University	19
B.S. 1961, LL.B. 1968, Washington and Lee University		Dunaway, George Baxter	
DeSnoye, Louis William	Va	B.S. 1960, Alabama Polytechnic Institute	Wash
B.S. 1961, University of Illinois		Dundlap, Richard Joseph	
Deuber, Frederic A. Lee	Okla	A.B. 1967, University of Washington	Ky
B.S. 1961, Ohio State University		Durham, Homer Coleman	
Diaz, John Andrew	Pa	B.S. 1964, University of Kentucky	Va
B.S. 1962, Lehigh University		Davis, John Hart	19
Dickey, William Lee	S.D.	A.B. 1966, Principia College	
A.B. 1967, Augustana College		Dawson, David Bruce	
Dickson, William B.	N.M.	B.S. 1967, Pennsylvania State University	Va
A.B. 1968, University of New Mexico		Dybeck, Abner Charles	
Dickson, William Boyd III	Md	A.B. 1961, The George Washington University	Va
A.B. 1963, University of Kansas		Dyck, Roger Donald	
Diehlmann, Marion Paul	Md	B.S. 1964, University of Florida	
A.B. 1963, The George Washington University			
Digman, John M.	Pa		
A.B. 1969, Cornell University			
Dingler, Robert William	D.C.		
B.C.E. 1969, The George Washington University			
Dingwall, John Powell	Md		
A.B. 1964, Virginia Military Institute			
Dixie, Robert Ray	Pa		
A.B. 1967, Pennsylvania State University			
Dixon, Harold Anthony	N.Y.		
B.F.E. 1964, New York University			
Dock, James Frederick	Okla		
A.B. 1967, University of Kansas			
Dodson, Howard Donald	Okla		
B.S. 1969, University of Denver			
Dodson, Robert James, Jr.	Mass		
B.S. 1969, Northeastern University			
Dougherty, William Kenneth	Va		
B.S. 1966, Yale University			
Domato, Dan, Jr.	Va		
B.S. 1969, College of Charleston			
Douglas, Daniel Gerald	Va		
A.B. 1967, Brown University			
Dougherty, David Edwin	Md		
B.S. 1961, Washington College			
Douglass, Paul Gloucester	Md		
A.B. 1967, The George Washington University			
Dowery, Carl Franklin	D.C.		
B.S. 1968, Montana State College			

[illegible]

Haggart, Ronald D. A.B. 1936, The George Washington University	D.C.	Harrison, Marion Edwin A.B. 1931, University of Virginia LL.B. 1934, The George Washington University	Va
Hall, Blair Parks A.B. 1931, University of Maryland	Md.	Harrison, Thomas Emil B.E. 1931, Johns Hopkins University	Md
Hall, Brian Lionel A.B. 1937, University of Nevada	Nev.	Harsh, Richard Stanley B.S. 1948, U.S. Military Academy	Okla
Hall, Dewey Eugene B.S. 1934, Ball State College	Ind.	Hawes, James Edmund B.S. in E.E. 1937, University of Illinois	D.C.
Hall, Henry Lyon, Jr. A.B. 1933, University of Massachusetts	D.C.	Hayakawa, Kenneth Kiyoshi B.M.E. 1937, The George Washington University	D.C.
Hall, Jack Herbert B.Ch.E. 1937, Rensselaer Polytechnic Institute	Va	Hayes, William Kenneth B.S. 1931, Bowman University	N.J.
Hall, James Murllock B.B.A. 1934, Wake Forest College	D.C.	Haynes, Samuel Merrell A.B. 1936, Georgetown University	Va
Hallow, Mary A.B. 1936, The George Washington University	Md.	Hays, James Murrah A.B. 1936, University of Maryland	D.C.
Halpern, Jack B. Stanley B.S. 1936, A.M. 1949, Columbia University	D.C.	Hazzard, John Patrick, Jr. B.A. 1936, University of Delaware	Del.
Halpern, Steven Erwin A.B. 1932, Temple University	Fla.	Hedberg, Shirley Lorraine Bovard A.B. 1937, A.M. 1939, University of Denver	D.C.
Hawstead, Grace Aleman B.S. in B.A. 1930, University of Arkansas	Va	Hedrick, Benjamin Sherwood Hedrick, Louis Francis B.M.E. 1933, General Motors Institute	Va Ind.
Halverson, Ronald Moyer B.S. in C.E. 1937, Drexel Institute of Technology	Va	Hedrick, William Edwin B.S. in E.S. 1949, Georgetown University	D.C. Va
Hanbush, Johnson Fred B.S. 1947, LL.B. 1949, University of Tennessee	Tenn.	Herke, Lowell Look B.S. in E.E. 1934, Case Institute of Technology	Va D.C.
Hanblum, Neal A.B. 1936, University of Delaware	Del.	Helm, Howard A.B. 1931, Rutgers University	D.C.
Hamel, Reginald Stanley A.B. 1934, Duke University	Md.	Henderson, Walter B.S. 1933, U.S. Military Academy	D.C.
Hamel, James John B.M.E. 1937, Georgia Institute of Technology	D.C.	Hendricks, Leah Kirstina B.S. in E.E. 1931, M.S. 1933, University of Missouri	D.C.
Hammon, Clyde Henry, Jr. B.S. 1936, Wofford College	S.C.	AM 1936, Columbia University	Maine
Hamm, William Joseph B.M.E. 1931, The George Washington University	Va.	Henry, John A. and A.B. 1932, Bowdoin College	Va
Handley, Earl Leslie A.B. 1935, University of Colorado	Va.	Herbert, Thomas Oliver B.F.E. 1931, Catholic University of America	Va Md.
Hanes, Richard Wayman B.S. in E.E. 1931, Purdue University	Va.	Herick, LaVerne Dale B.S. 1937, Iowa State College of Agriculture and Mechanic Arts	Va
Hanes, Henry B.S. in M.E. 1931, Drexel Institute of Technology	N.Y.	Hessman, Marion Frank B.S. 1931, Ohio State University Ph.D. 1936, University of Illinois	Va
Harder, Paul Richard B.S. 1937, Rose Polytechnic Institute	Va	Hertz, Harvey Samuel B.S. in E.E. 1933, University of Colorado	Nev.
Hardman, John Welch B.S. 1932, University of Maryland	D.C.	Hez, Robert Richard B.S. 1931, Columbia University	D.C.
Harnon, Joseph Robert B.B.A. 1938, University of Georgia	Va	Harsh, Howard Wolfgang Diploma 1937, Technische Universität Berlin, Germany	Mich
Harrison, Howard Richard B.S. 1937, University of Rhode Island	R.I.	Hessman, Lloyd Edward B.S. in Law 1935, LL.B. 1937, Wayne State University	D.C.
Harpur, William Risque A.B. 1936, The George Washington University	Ky.	Hindon, Robert Ainsworth A.B. 1935, Randolph-Macon College	Canada
Harris, Patricia Roberts A.B. 1935, Howard University	D.C.	Hirson, Kenneth James A.B. 1936, McMaster University	Canada
Harris, Sidney B.B.A. 1931, College of the City of New York	N.Y.	Hilberg, Frank Clarence, Jr. A.B. 1936, University of Virginia	Del. Ohio
J.D. 1937, The George Washington University		Hill, Warren Dean B.S. 1933, Ohio State University	
Harrison, Allen Hugh, Jr. A.B. in Govt. 1934, The George Washington University	Va.		

Holmes, Arthur Jerry B.S. 1935, LL.B. 1935, University of Washington	Wis.	Howard, Jay William A.B. 1933, The George Washington University	D.C.
Holmes, L. M. LL.M. 1937, The George Washington University		Howden, Frederick Bingham III A.B. 1919, University of New Mexico	N.M.
Holmes, Sabin A.B. 1931, University of Hawaii	Hawaii	Hudson, Herbert Fitcham A.B. 1934, University of Massachusetts	N.Y.
Holmes, Joseph Gregory A.B. 1934, Georgetown University	Va.	Hudson, Elliott Markov A.B. 1937, LL.B. 1937, University of Oklahoma	Texas
Holmes, L. B. LL.B. 1937, The George Washington University		Hudson, Thomas Kent B.S. 1911, J.D. 1936, Northwestern University	Va.
Hoback, Karl Franklin B.S. 1935, M.S. 1935, Marshall College	Va.	Hunter, Edward Hastings B.S. 1932, Pennsylvania State University	Pa.
Hoback, P. D. Ph.D. 1936, West Virginia University		Hunter, James Hope B.S. 1911, J.D. 1935, University of Oklahoma	Okla.
Hoback, Stanley Murray A.B. 1938, Bowdoin College	N.Y.	Hull, William Jacob A.B. 1914, LL.B. 1917, Yale University	D.C.
Hoback, Richard Kelly A.B. 1931, University of Arizona	Ariz.	Humphreys, Keith Strayford B.S. 1919, Brigham Young University	Wyo.
Hoback, Philip Ivy A.B. 1931, Rutgers University	N.J.	Hunter, Thomas Bradley B.S. 1913, Case Institute of Technology	Ohio
Hoback, Mary Ann B.S. 1934, Lynchburg College	D.C.	Huntman, Lawrence Darrow B.S. 1926, Pennsylvania State University	Va.
Hoback, Albert Caryach B.S. 1937, Virginia Polytechnic Institute	Va.	Hurst, Carl Wilson, Jr. A.B. 1930, LL.B. 1931, The George Washington University	Va.
Hoback, Thomas Allen B.S. 1934, University of Cincinnati	N.J.	Hunter, Connelley Joseph B.S. 1936, U. S. Merchant Marine Academy	Md.
Hoback, Drayton Elsworth W.E.L. 1936, University of Virginia	Ky.	Hunter, Francis Stephen B.S. 1927, University of Maryland	Md.
Hoback, John Stanley A.B. 1938, Centre College		Hutchinson, Alvin David B.S. 1914, B.A. 1917, Ohio State University	N.Y.
Hoback, Eugene Love A.B. 1934, University of California at Los Angeles	Calif.	Hutton, Fernald Lee A.B. 1931, Central College	Mo.
Hoback, A.M. AM in Govt. 1936, The George Washington University		Hude, Loren Udelson, Jr. A.B. 1934, Brigham Young University	Utah
Hoback, Kenneth Norman B.S. 1938, LL.B. 1938, University of Wisconsin	D.C.		
Hoback, Tony Sherwin A.B. 1936, American University	Va.	I	
Hoback, A.M. AM in Govt. 1936, The George Washington University		Iannotti, Lawrence William B.S. 1914, U. S. Naval Academy	Conn.
Hoback, William Harold B.S. 1935, University of Oklahoma	Okla.	Iannotti, Mary Rose B.S. 1937, West Virginia Institute of Technology	W.Va.
Hoback, William Harry B.S. 1937, The George Washington University	D.C.	Iannotti, Columbus University Ivey, William Thomas, Jr. A.B. 1931, University of South Carolina	Pa.
Hoback, James Anthony A.B. 1937, The George Washington University		Iannotti, Robert T. A.B. 1932, University of Hawaii	Va.
Hoback, Cary Clay B.S. 1934, University of Arkansas	Va.	Iannotti, William H. LL.B. 1937, University of Connecticut	D.C.
Hoback, Robert H. A.B. 1937, Ohio Wesleyan University	Ohio	Iannotti, William H. B.C.E. 1938, College of the City of New York	Va.
Hoback, James H. B.S. 1937, New York University		Iannotti, Francis Maryack A.B. 1934, University of Hawaii	Hawaii
Hoback, Mary E. A.B. 1937, West Virginia University	Md.		
Hoback, James Joseph B.S. 1937, LaSalle College	Del.	J	
Hoback, Lawrence Gary A.B. 1937, The George Washington University	D.C.	Jahay, Philip Harley B.S. 1937, University of Wisconsin	Wyo.
Hoback, William R. B.S. 1937, Oregon State College	Oreg.	Jahay, John David B.S. 1937, University of Maryland	Va.
Hoback, Howard B. A.B. 1934, Pennsylvania State University	D.C.	Jahay, Arthur B.S. 1934, Massachusetts Institute of Technology	N.J.
Hoback, Joseph Ann A.B. 1937, Cornell University	N.Y.	Jahay, George R. A.B. 1936, University of Maryland	Md.

Jacobs, Herbert William, Jr. B.S. 1929, Bradley University	Ill.	Jones, Charles Sherfy B.S. in C.E. 1953, Duke University	D.C.
Jacobs, John Frederick B.S. 1957, Florida State University	Fla.	Jones, Harry Chapman III B.S. 1957, Yale University	Va.
Jackson, Bernice Harriet L.B. 1947, Wisconsin State College, River Falls A.M. in Govt. 1954, The George Washington University	D.C.	Jones, John Norvill A.B. in Govt. 1926, The George Washington University	Ark.
Jager, Elmer R. Rogers A.B. 1948, Smith College	D.C.	Jones, Rance Earl A.B. 1945, Virginia Military Institute	Va.
Jagger, Bruce Anderson B.S. 1947, University of New Mexico	Wyo.	Jones, William Tomson A.B. 1948, University of Utah	Utah
Jamborsky, Richard James A.B. 1948, The George Washington University	Tenn.	Jordan, Gary Lynn B.S. in C.E. 1958, University of Kansas	Kans.
James, Abraham L. A.B. 1958, University of Liberia	D.C.	Jordan, Phil Winburn B.S. 1935, University of Georgia	Md.
James, Donald R. Reed A.B. 1946, Simon Hall University	Va.	Joslyn, Danforth A.B. 1953, The George Washington University	Va.
Jarboe, George Eugene A.B. 1948, University of Maryland	D.C.	Jones, James Gerard B.M.E. 1957, Villanova University	N.Y.
Jarman, Harold Dudley B.S. in E.E. 1967, South Dakota State College	D.C.	Judd, Evan Vernel B.S. 1956, Brigham Young University	Utah
Jarvis, Cecil L.D. 1928, University of Virginia, Austria	S.D.	Judy, William Raines B.S. in B.A. 1951, Fairmont State College	W.Va.
Jeffrey, Donald Dym B.S. 1947, University of Wisconsin	Md.	Juhász, Andrew Richard B.S. in M.E. 1949, University of Buffalo	Md.
Jeffrey, David B.S. in B.A. 1955, Ohio State University	Va.		
Jenkins, Arthur Lee A.B. 1941, Lafayette College	Ohio	K	
Jenkins, John Smith A.B. 1941, Lafayette College	Fla.	Kaback, Delmar, Jr. A.B. in Govt. 1948, The George Washington University	Va.
Jennings, Charles Henry III M.S. 1949, University of Denver	D.C.	Kahn, Daniel Lyon A.B. 1954, University of Miami	Fla.
Jennings, Curtis Arthur A.B. 1949, University of Arizona	Va.	Kahn, Stuart A.B. 1957, Indiana University	N.J.
Jennings, Stanford Leroy A.B. 1948, Clark University	Aria.	Kalman, Lorraine B.S. 1941, D.C. Teachers College	D.C.
Jennings, Tatum Earl IV B.S. in E.E. 1954, University of Miami	Md.	Kalman, Stuart A.M. in Govt. 1951, The George Washington University	Latvia
Jenson, Arthur A.B. 1948, University of Alabama	Fla.	Kalms, Karlis Vilis Ph.D. in Law 1954, University of Latvia	N.Y.
Jensen, Bruce Fennerson A.B. 1946, University of Southern California	Va.	Kane, Thomas John A.B. 1940, Cornell University	N.Y.
Jensen, Daniel Lynn A.B. in Govt. 1946, The George Washington University	Calif.	Kanne, Bruce Neal A.B. 1957, The George Washington University	D.C.
Jensen, Elmer William B.S. 1942, Bradley College	Md.	Karlan, Charles Marvin B.S. 1953, Massachusetts Institute of Technology	Tenn.
Jensen, Kenneth Russell B.M.E. 1950, Syracuse University	N.Y.	Karp, Arnold Lewis A.B. 1954, University of Maryland	Md.
Jensen, Maurice A.B. 1951, South Carolina State College	Va.	Kear, Darrell Dee A.B. 1954, West Virginia University	W.Va.
Jensen, Raymond Lee B.C.E. 1948, Rensselaer Polytechnic Institute	S.C.	Ketherman, Walter Higgins, Jr. A.B. 1948, College of William and Mary	Pi.
Jensen, Robert Alfred B.S. 1940, Ohio State University	N.Y.	Kilb, Donald Allen L.L.B. 1941, Dickinson College	D.C.
Jensen, Robert John B.S. 1947, Colorado School of Mines	Ohio	Katz, Sylvan L. B.S. 1944, University of Maryland	Ohio
Jensen, Rudger Alton B.S. 1947, University of Illinois	Ill.	Katz, Donald Allen B.M.E. 1958, Ohio State University	Va.
Jensen, Vernon William, Jr. A.B. 1946, Duke University	Md.	Kay, Ardis A.B. 1957, The George Washington University	Va.
Jensen, Remy Franklin B.S. in C.E. 1951, L.L.B. 1958, University of Illinois	Aria.	Kayo, Harvey B.S. in E.E. 1956, Lowell Institute of Technology	Va.
Jensen, William Francis A.B. in Govt. 1951, Lafayette College	Md.	Kearney, Richard Vincent B.B.A. 1951, Manhattan College	Md.
		Keele, Robert M. A.B. in Govt. 1951, University of Maryland	

Kear, Fred Avars B.S. in C.E. 1937, University of Washington	Wash.	Koutras, George Agost A.B. 1934, The George Washington University	D.C.
Keefer, Clarence Cyrus, Jr. A.B. 1954, University of the South	D.C.	Kovelos, Gilbert Gerald B.E.E. 1936, Cooper Union	Va.
Kelly, Anna Brooke A.B. 1937, Maryville College	Md.	Kovin, John Fred A.B. 1938, Washington Missionary College	Md.
Kelly, John Davidson A.B. 1911, Carroll College	Mont.	Kowalsky, Chester Harry B.S. in E.M. 1936, West Virginia University	Pa.
Kelly, Robert Stanley B.S. 1938, Oregon State College	Calif.	Krassoff, Ronald Joseph B.S. in Eng. 1918, The George Washington University	D.C.
Kennel, William Anthony, Jr. B.S. 1932, M.S. 1933, California Institute of Technology	D.C.	Krassoff, Otto B.E. 1938, Louisiana State University	La.
Kennedy, Joseph William B.S. 1934, M.P. 1935, College	Iowa	Krawnsky, Stanley Thomas B.S. in E.E. 1937, University of Pittsburgh	Pa.
Kesagappon, Charles Robert, Jr. B.S. 1943, Kent State University	Ohio	Krutz, Henry A.B. 1938, Hood College	N.J.
Kesler, James Edwin B.S. in E.E. 1936, Virginia Polytechnic Institute	W.Va.	Krutz, Walter B.S. in M.E. 1936, Lafayette College	D.C.
Kester, Richard Miller A.B. 1938, University of Michigan	Mich.	Krutz, Thomas Leo B.M.E. 1941, General Motors Institute	Md.
Kettum, Lily Taylor Kitt, Bernard Stanley, Jr. Kitt, Bernard Stanley, Jr.	Va. Pa. Pa.	Krutz, Rudin Lewis B.S. 1931, Polytechnic Institute of Brooklyn	N.Y.
Kelly, LaDonna Marie A.B. 1938, A.G. 1939, Michigan College	Conn.	Krutz, Norman Nathan B.S. in E.E. 1938, Drexel Institute of Technology	Pa.
Kline, Warren William B.S. 1938, University of Utah	Utah	Krutz, Richard Everett B.S. 1938, Lehigh University	Pa.
Kline, John R. Reed A.B. 1938, Pennsylvania State Teachers College, Indiana	Va.	L.	
Kline, H. A. Jr. B.S. 1938, Indiana State University	D.C.		
Kline, H. A. Jr. A.B. 1938, B.E. 1938, Social National University, Hong Kong	Korea	La Bette, Clarence Victor, Jr. A.B. 1938, Cornell University	Mass.
Kline, Robert Alexander B.S. 1938, H. B. 1938, Kentucky College	W.Va.	La Bette, Joseph B.S. 1938, Pennsylvania State University	Va.
Kline, H. B. 1938, The George Washington University		Lambert, George Paul A.B. 1938, Princeton University	N.Y.
Kline, George William B.S. in E.M. 1937, West Virginia	Va.	A.M. 1941, Johns Hopkins University	
Kline, William Hamilton B.S. in E.E. 1938, University of Kentucky	Ky.	Lambert, George Paul B.S. 1938, Harvard College	D.C.
Kline, H. B. 1938, Georgetown University	Conn.	B.S. in Eng. 1938, Massachusetts Institute of Technology	
Kline, Robert Nathan B.S. 1938, University of Maryland	Md.	Lambert, John William A.B. 1938, Cornell University	N.Y.
Kline, H. B. 1938, University of Hawaii	Hawa.	Lambert, Paul Ernest B.S. 1938, Ohio State University	Md.
Kline, Bruce George B.S. in M.E. 1938, in Bus. Mgmt. 1940, University of Kentucky	Va.	Lambert, William Wayne Lambert, Karl Stuart	Texas Va.
Kline, William A.B. 1938, Cornell University	Md.	A.B. 1938, A.M. 1942, University of Oregon	
Kline, William B.S. in M.E. 1938, University of	N.Y.	Lane, Anthony Thomas B.E.E. 1937, The George Washington University	Va.
Kline, Mary Anne A.B. 1938, Cornell University	D.C.	Lane, Charles Thomas B.S. 1934, H.B. 1936, Wake Forest College	N.C.
Kline, Mary Anne A.M. 1938, Cornell University	D.C.	Lane, John Stevenson A.B. 1938, University of Michigan	Va.
Kline, Mary Anne B.E. 1938, Cornell University	Ohio	Lane, Guy Paul A.B. 1938, Union University	Tenn.
Kline, Mary Anne A.B. 1938, Cornell University	Va.	Lane, William Adams A.B. in Eng. 1934, The George Washington University	Va.
Kline, Mary Anne A.B. 1938, Cornell University	D.C.	Lambert, Terrell Lee, Jr. B.S. 1938, Montana State College	D.C.
Kline, Mary Anne A.B. 1938, Cornell University	D.C.	Lambert, Peter Bradford, III B.S. in M.E. 1937, Rose Polytechnic Institute	Ky.

LaPrade, John Christian	Va.	Levitt, Julian S.	DC
B.S. in Ch.E. 1937, New Mexico College of Agriculture and Mechanics Arts		B.S. 1931, College of the City of New York	
Larcher, Earl Lynn	Utah	M.S. 1937, Kansas State College of Agriculture and Applied Science	DC
B.S. 1937, Utah State University of Agriculture and Applied Science		Levin, Maria	DC
Larson, Alfred L.	Va.	B.M.L. 1939, Tartu University, Estonia	N.J.
B.S. 1942, M.B.A. 1955, New York University		Levy, Paul	
LaRue, Adams John	Va.	R.E.E. 1932, Rensselaer Polytechnic Institute	
B.S. 1946, Virginia Polytechnic Institute		Levy, Louise Mylene	Md.
Lasch, Robert Gerald	Kans.	A.B. 1932, 1935, The George Washington University	Va.
A.B. 1937, Municipal University of Wichita		Lewis, James Thomas	
L.L.B. 1934, University of Kansas		A.B. 1937, Randolph-Macon College	Va.
Lassman, Julian Paul	Md.	Liberopoulos, Lorenzo Ioannou	
A.B. 1934, University of Maryland		B.S. 1938, University of Idaho	DC
Leach, Anthony Claude, Jr.	La.	Limand, Don Paul	
B.S. 1936, Louisiana State University		A.B. 1937, University of Pittsburgh	Pa.
Leatherman, Stanley James	Ind.	Lindbeck, Charles Haroldson	
A.B. 1937, Taylor University		B.S. 1936, University of Illinois	DC
LaRue, Edward Wayne, Jr.	Calif.	Linton, Thomas Denison, Jr.	
A.B. 1935, College of the Pacific		B.S. 1939, U.S. Naval Academy	
Leider, Anthony Warkhausen	Va.	L.L.B. 1938, University of Arizona	Wisc.
A.B. 1934, University of Virginia		Lowe, Richard Gay	
Lee, David Hoy Chang	Hawaii	B.S. 1934, University of Wisconsin	DC
A.B. 1935, University of Hawaii		Lipnuk, Stanley Melvin	
Lehman, George Joseph	Md.	A.B. 1936, Columbia University	Mo.
B.S. 1937, College of the City of New York		Lisman, Martin Albert	
Leone, Charles Philip	Md.	B.S. in M.E. 1937, Purdue University	Ind.
B.S. in M.E. 1931, San Diego State College		L.L.B. 1937, University of Kansas City	Kans.
Leland, Sherman, Jr.	Calif.	Livingston, John Earl, Jr.	
A.P. 1937, University of California		B.S. in B.A. 1938, University of Arkansas	Mo.
Leisner, James Edwin	Ohio	Lockhart, Lewis Lyon	
B.S. in E.E. 1937, Purdue University		A.B. 1937, Western Maryland College	DC
Leppin, Paul Stanley	Mich.	Long, Robert Eugene	
B.S. in M.E. and Eng. Adm. 1937, Michigan College of Mining and Technology		A.B. 1937, Indiana University	Ind.
Levy, Paul	DC	Long, George Wing Tat	
L.L.D. 1932, Pzmarys Peter University, Hungary		B.S. 1936, University of Hawaii	
Levi, Bernard Samuel	N.Y.	L.L.B. 1937, University of Michigan	Va.
A.B. 1937, New York University		Love, Carl George	
Lewis, Charles Richard	Pa.	A.B. 1936, College of Wooster	Va.
R.E.E. 1937, The George Washington University		Love, James William	
Lewis, David John	Va.	R.A.S. 1938, Catholic University of America	ME
B.S. 1937, California Institute of Technology		Lovett, Lee Union	
Lewis, George Franklin	N.Y.	A.B. 1937, Princeton College	DC
B.S. 1936, College of the City of New York		Low, Allan Martin	
Levy, Harry Edward	Oreg.	B.S. 1936, University of Maryland	Ky.
B.S. 1937, University of Oregon		Low, Cedric Luther	
Leiter, James Dudley	Ala.	A.B. 1937, University of Louisville	Md.
A.B. 1937, East Central State College		Low, Edward	
Levin, Burton Vincent	DC	B.S. 1937, University of Maryland	N.Y.
A.B. 1938, Duquesne University		Luckhardt, Felix George	
Levine, Aaron M.	N.Y.	B.S. 1936, Cincinnati University	DC
A.B. 1938, Brooklyn College		Lewis, Norman Mayfield	
Lewis, Herbert	DC	A.E. 1938, University of Maryland	DC
B.S. 1937, Brooklyn College		Lewis, Percy William	
Lewis, Matthew William	DC	B.L. 1937, University of California	Ala.
A.B. 1937, University of Maryland		Linn, James A.	
Lewis, David Richard	DC	A.E. 1937, A.M. 1938, University of California at Los Angeles	Va.
A.B. 1937, New York University		Lynn, Thomas Nath III	
Lewis, Lawrence	DC	B.S. in Comm. 1935, University of Virginia	Va.
B.S. 1937, Washington and Lee University		Lynn, Carl Vernon	
		A.B. 1936, West Virginia Wesleyan College	
		A.M. 1937, American University	

M

Masael, Louis Otto	Ohio	Mason, Michael Charles	Md
B.S. 1917, Ohio State University		B.S. 1917, Evansville College	
Mascher, David	Va	Mason, John	Va
A.B. 1926, University of Vermont		B.S. 1926, University of Kansas	
Mascher, Arthur May	D.C.	Mason, James Benjamin	Va
B.S. 1921, M.P.S. 1924, University of Iowa, Iowa		B.S. 1921, Cornell Agricultural College	
Massey, Louis George	Md	Massey, Guy Eugene	W Va
A.B. 1927, University of Utah		B.S. 1924, West Liberty State College	
Massey, John Jacob	D.C.	Massey, Philip Michael	Nev
B.C.E. 1917, Yale University		A.B. 1927, University of Nevada	
Massey, Elizabeth Joyce	Va	Massey, Lawrence Stephen	Pa
A.B. 1926, Harvard College		B.S. 1926, 1927, Lincoln Institute of Technology	
Massey, Daphne	Pa	Massey, Frank Hans	Ohio
A.B. 1926, Cornell University		B.S. 1926, S.I.D. 1927, Frederick-Alexander University of Pomerania, Germany	
Massey, Maria Jean	Va	M.C.E. (A.P.) 1924, The George Washington University	
Massey, Howard College	Va	Massey, Charles Austin, Jr.	Va
Massey, Joseph Hector	Va	A.B. 1927, The George Washington University	
A.B. 1927, The George Washington University	Ind	Massey, Mary Edward	Md
Massey, Richard Leo		B.S. 1927, M.B.A. 1927, University of Maryland	
B.S. 1927, Indiana University		Massey, Robert	Va
Massey, Betty Ruth	Va	A.B. 1928, The George Washington University	
A.B. 1928, The George Washington University	Va	Massey, Louis Richard	N.Y.
Massey, Ronald Paul		A.B. 1928, Harvard University	
A.B. 1928, Northwestern College	Utah	Massey, Charles Leonard	Kans
Massey, Louis Le Roy		B.S. 1928, University of Kansas	
B.S. 1924, Brigham Young University		Massey, Henry Fraton Beaumont	D.C.
Massey, Gerald	Fla	A.B. 1928, The George Washington University	
A.B. 1928, University of Miami		Massey, Stephen Rogers	Va
Massey, Frank May	Texas	A.B. 1928, Washington University	
B.S. 1928, M.S. 1933, North Texas State College		Massey, William Edwin, Jr.	Ohio
Massey, Howard	N.Y.	B.S. 1928, Ohio State University	
B.S. 1928, New York University		Massey, Chester Earl, Jr.	Va
Massey, Julia Boniface	N.Y.	B.M.E. 1928, Rensselaer Polytechnic Institute	
B.S. 1928, University of		Massey, Edwin Chester	Mass
Rochester		B.S. 1928, University of Pennsylvania	
Massey, Philip David	Conn.	Massey, Paul Joseph	Md
A.B. 1928, Burn College		A.B. 1928, Bowdoin College	
Massey, James Leonard	N.H.	A.M. 1928, Harvard University	
B.S. 1928, University of New Hampshire		Massey, Albert	Nev
Massey, Lemuel Peter	D.C.	A.B. 1928, University of Nevada	
A.B. 1928, The George Washington University		Massey, Samuel Samuel	Va
Massey, John Cyril	D.C.	B.S. 1928, The George Washington University	
B.S. 1928, Roosevelt University		Massey, Warren Alexander	Fla
B.S. 1928, Northwestern University		A.B. 1928, 1929, The George Washington University	
Massey, Linda Bradford	Mass	Massey, George Francis	Pa
A.B. 1928, Harvard University		B.C.E. 1928, Villanova University	
Massey, Edward Joseph	Mass	Massey, Edgar Thomas	D.C.
A.B. 1928, Dartmouth College		A.B. 1928, A.M. 1928, University of Illinois	
A.M. 1928, Tufts University		Massey, John William	Md
Massey, Lucius	N.Y.	B.S. 1928, M.B. 1928, University of Kansas	
B.S. 1928, Rensselaer Polytechnic Institute		Massey, Francis August	Md
Massey, Harry Francis	N.J.	B.S. 1928, University of Maryland	
B.S. 1928, Washington and Lee University		McCauley, Joseph Eugene	Va
Massey, Francis R. Jr.	Md	B.M.E. 1928, Rensselaer Institute of Technology	
B.S. 1928, The George Washington University		McCarthy, Anna Francis	D.C.
Massey, John Richard	Iowa	A.B. 1928, Bowdoin University	
B.S. 1928, The George Washington University			
Massey, John	Nev		
B.S. 1928, University of Nevada			
Massey, Joseph	Philippines		
B.S. 1928, The George Washington University			

McConnell, Terry James	D C	Miller, Birdsall Dunham	Pa
B.S. 1957, Tennessee Polytechnic Institute		B.S. 1915, Albright College	
McCormack, John Joseph	Md	M.S. 1952, Ohio State University	Maine
B.S. 1951, Boston College		Miller, Clark Jerome	III
McCormick, James Carlos	Ariz	A.B. 1954, University of New Hampshire	
A.B. 1958, University of Arizona		Miller, John David	
McDermott, Edna Floyd	Ohio	A.B. 1940, North Central College, Ill.	Va
A.B. 1951, Denison University		Miller, John Franklin	Va
McDermott, Patricia Louise	Idaho	B.E.E. 1955, University of Florida	
A.B. 1958, Idaho State College		Miller, Malcolm Drennan	
McDonald, Malcolm Theodore	Va	A.B. 1931, Grinnell College	
A.B. 1952, University of North Carolina		L.B. 1955, Georgetown University	D.C.
McDonnell, Doris Dewann	W Va	Miller, Robert Jay	
A.B. 1957, West Virginia University		B.S. in C.E. 1957, Pennsylvania State University	
McDowell, William Woods, Jr	Md	Miller, Ronald Jack	N.Y.
B.E. 1941, Johns Hopkins University		A.B. 1958, The Citadel	D.C.
McElwaine, Matthew Kenneth	Va	Miller, Roy	
A.B. 1954, Tulane College		B.S. & M.E. 1956, University of Washington	Pa
McElroy, Mary Alice	Va	Miller, Wilbur Clarence	
B.S. 1942, University of Alabama		A.B. 1951, Pennsylvania State University	
McEnish, David Frederick, Jr	Pa	L.B. 1956, The George Washington University	Mass
B.S.E. 1942, U. S. Coast Guard Academy		Miller, Rankin Allen	
McIntosh, James Albert	Idaho	B.S. in L.L. 1950, Northeastern University	Va
B.S. 1955, U. S. Naval Academy		Minstead, Jerry Bennett	
McKee, Douglas Robert	N.Y.	B.S. in E.E. 1957, Virginia Polytechnic Institute	Fla
B.M.E. 1951, Rensselaer Polytechnic Institute		Miner, Charles Edward, Jr.	N.J.
McKee, James Joseph	N.Y.	B.S. 1951, Florida State University	
B.S. 1950, Fordham University		Minn, John Henry	Ala
McNamara, Thomas Neal	Va	B.S. in E.E. 1952, Rutgers University	
A.B. 1952, Duke University		Mockel, Charles Reese	Nebr
McNeely, Gibson Elliott	N.C.	B.S. 1951, University of Alabama	
B.S. 1950, University of North Carolina	Ohio	Mockel, George Charles	
McNeely, James Hunter		B.S. 1941, Nebraska State Teachers College, Kearney	
A.B. 1956, Miami University	Nebr	A.M. 1942, Georgetown University	
Means, Cecil Paul	Mass	Ph.D. 1949, University of Paris, France	Va
A.B. 1957, University of Nebraska		Mockel, George Joseph, Jr.	
Mehta, James Philip	Ala	B.N.S. 1954, Massachusetts Maritime Academy	N.Y.
B.A. 1945, University of Miami		B.S. in P.S. 1958, Georgetown University	
Megginson, Ernest Michael	D.C.	Mockel, Roy Stuart	Nebr
B.S. 1957, University of Alabama		B.S. 1957, Cornell University	
Mela, Milton Samuel		Moe, Charles James	Va
B.C.E. 1951, Rensselaer Polytechnic Institute		A.P. 1951, Nebraska Wesleyan College	
Meller, Michael Nicholas	Va	Mockel, Robert John	Md
B.C.E. 1957, Pratt Institute		B.S. 1950, Syracuse University	
Mensch, Bruce Stephen	D.C.	Mohr, Michael	D.C.
A.B. in Gov. 1947, The George Washington University		B.S. in B.A. 1950, New York University	
Merry, Edward John	Pa	Mohr, Robert Hayes	Mass
B.S. 1951, Pennsylvania State University		B.L.E. 1944, The George Washington University	Md
Messersmith, William W. III	La	Mosby, Clifford Johnson	
B.A. 1951, Tulane University		A.B. 1948, University of New Hampshire	
Mertens, Delmar D.	Kans	Mosby, Charles Lee	Texas
B.S. 1955, Fort Hara Kansas State College		B.S. in E.E. 1954, Rose Polytechnic Institute	
Meyer, Albert Bernice	Md	Mosby, John Carter	Ohio
B.S. 1951, University of Maryland		A.B. 1946, University of Texas	
Meyer, Mark Thomas	Calif	Mosby, Richard Ernest	Utah
A.B. in Gov. 1947, The George Washington University		B.M.E. 1957, University of Dayton	
Mick, Ann, Jr	Mich	Moss, Robert Meek	D.C.
B.S. in C.E. and M.E. 1949, University of Michigan		B.S. 1959, L.B. 1956, University of Utah	
Migault, William Alexander, Jr	Va	Moss, Eleanor Humphrey	W Va
B.A. 1951, Pennsylvania State University		A.B. 1950, Grinnell College	
Milford, James Julius	Va	Moss, Richard Lynn	
B.S. in B.A. 1951, Georgetown University		B.S. in E.E. 1957, West Virginia University	
Miles, Louis William	Va		
B.S. in C.E. 1950, Massachusetts Institute of Technology			

Morarty, Patrick J. A.B. 1918, American International College A.M. 1921, University of Minnesota Mass. A.B. 1914, Columbia University Md. B.S. 1919, University of New Hampshire Va. A.B. 1914, Virginia Polytechnic Institute Morrison, James Philip A.B. 1916, The George Washington University Pa. A.B. 1916, Indiana University Md. A.B. 1914, Dickinson College Calif. A.B. 1917, Yale University Va. B.S. 1916, University of Kansas B.S. 1917, Santa Monica State Teachers College, California Moss, Ross L. A.B. 1917, Brigham Young University Va. B.S. 1917, University of Virginia D.C. B.S. 1917, St. Louis University Pa. B.S. 1917, Pennsylvania State University D.C. B.S. 1917, University of California M.S. 1917, 1918, Lehigh University S.D. A.B. 1917, University of South Dakota D.C. A.B. 1917, Washington College B.S. 1917, Washington College Va. A.B. 1917, University of Illinois Md. B.S. 1917, Georgetown University Va. A.B. 1917, Harvard University Mass. B.S. 1917, University of California Murray, Theodore Albert A.B. 1917, Bard College Va. A.B. 1917, U.P. 1917, L.E.M. 1917, The George Washington University Md. B.S. 1917, University of Maryland B.S. 1917, University of Maryland B.S. 1917, The George Washington University N.I. A.B. 1917, Southern College of Engineering D.C. A.B. 1917, Georgetown University N.Y. A.B. 1917, Rutgers University Myer, Daniel Kutz B.E. 1917, Georgia Institute of Technology Pa. Myers, John Edgar B.S. 1917, University of Maryland Nev. B.S. 1917, University of Nevada N Nelson, William B. A.B. 1917, California College, Ala. D.C. Nelson, William Albert A.B. 1917, University of Nebraska W.Va. B.S. 1917, West Liberty State College Mass. Nelson, William Albert A.B. 1917, Harvard University N.Y. Nelson, William Albert A.B. 1917, St. Bernardine of Siena College Va. Nelson, William Albert A.B. 1917, University of Colorado Md. Nelson, William Albert A.B. 1917, University of Maryland Md. Nelson, William Albert B.S. 1917, Georgetown University Ill. Nelson, William Albert B.S. 1917, Indiana University N.I. Nelson, William Albert B.E. 1917, Yale University Ohio Nelson, William Albert B.S. 1917, Carnegie Institute of Technology Md. Nelson, William Albert A.B. 1917, Harvard University Va. Nelson, William Albert A.B. 1917, University of California Ohio Nelson, William Albert A.B. 1917, Youngstown University Pa. Nelson, William Albert B.S. 1917, Indiana College Md. Nelson, William Albert B.S. 1917, Indiana College Va. Nelson, William Albert B.S. 1917, U.S. Naval Academy Va. Nelson, William Albert B.S. 1917, Yale University Ill. Nelson, William Albert B.S. 1917, University of Illinois D.C. Nelson, William Albert B.S. 1917, Virginia Polytechnic Institute Hawaii Nelson, William Albert A.B. 1917, University of Hawaii Va. Nelson, William Albert B.S. 1917, Brigham Young University Md. Nelson, William Albert A.B. 1917, University of Maryland N.D. Nelson, William Albert A.B. 1917, Minnesota State Teachers College, Marshall Ark. Nelson, William Albert A.B. 1917, Ohio Wesleyan University D.C. Nelson, William Albert A.B. 1917, University of Virginia Va. Nelson, William Albert B.M. 1917, Rutgers University Md. Nelson, William Albert B.S. 1917, University of Maryland

Noves, John Zbarskie	D.C.	Palmer, Arthur Irving, Jr.	Va.
A.B. 1952, University of Washington		B.E. 1949, Yale University	
LL.B. 1958, The George Washington University		M.S. 1949, University of Virginia	ME
Nunton, Nicholas Stephen	D.C.	Panarella, Carl Francis	N.J.
A.B. in Govt. 1957, The George Washington University		B.S. 1928, Loyola College	
Nysayer, Edward William	Pa.	Panzetta, Frank Ralph	N.J.
B.S. in C.E. 1957, University of Pittsburgh		A.B. 1937, The George Washington University	
O		Panzetta, Joseph	
Oakes, Thomas Barrett	Va.	A.B. 1911, The George Washington University	Va.
A.B. 1926, Yale University		Papadimitriou, John Nicholas	Va.
Oberbauer, Louis B. II	Iowa	A.B. 1915, University of Delaware	
B.S. in C.E. 1946, Iowa State College of Agriculture and Mechanic Arts		Parker, George	Va.
Oberlin, Philip Spradley	Ohio	B.S. in Ind. Eng. 1960, Lafayette College	
B.S. in Met. E. 1945, Purdue University		Parker, Stephen Harold	
O'Brien, Robert Earl	N.C.	B.S. in Ch. E. 1957, College of the City of New York	Va.
B.S. 1954, University of Maryland		Parks, Mary Ellen	Va.
O'Brien, James David	Mass.	B.S. 1940, Florida State University	
B.S. in F.S. 1949, Georgetown University		Parrish, Stanford Elmer	D.C.
O'Connor, Dennis J. and Watson	Hawaii	B.S. 1948, University of Illinois	
B.S. 1952, U.S. Naval Academy		Patterson, Wendell Augustus, Jr.	D.C.
O'Connor, John Thomas	Va.	A.B. 1947, University of Georgia	
A.B. 1927, University of Maryland		Patt, Leonard Adrian	Md.
Odin, Dexter Stephen	Ky.	A.B. 1942, A.M. 1945, Brooklyn College	
B.S. 1946, University of Florida		Patterson, Joseph James, Jr.	
Olch, James Emory	D.C.	B.S. in Mat. Trans. 1952, New York State Maritime College	Va.
A.B. 1951, Michigan State University		Paul, Allen Gilbert	
Olexa, David John	Va.	B.M.E. 1956, Rensselaer Polytechnic Institute	Va.
B.S. in Ch. E. 1966, Pennsylvania State University		Pavlick, Walter Eugene	D.C.
Olexo, George Robert	Conn.	B.S. 1949, Case Institute of Technology	
A.B. 1941, University of Bridgeport		Peacock, John Edward	Texas
A.M. 1944, New York University		B.S. 1952, University of New Hampshire	
Oleyar, George Louis	Va.	Paine, Albert Alfred	D.C.
B.S. 1941, Georgetown University		A.B. 1914, The George Washington University	
Olsen, Charles Olaf	D.C.	Peckham, Charles Solsten	
A.B. 1948, Stanford University		A.P. in Govt. 1956, The George Washington University	Va.
M.L.S. 1951, Columbia University		Perry, Kenneth Edward	
Olsen, Dennis M.	Idaho	A.B. 1947, Kansas State Teachers College, Emporia	Va.
B.S. 1951, Brigham Young University		H.B. 1950, University of Kansas	
Olsen, Gordon Harold	N.D.	Belton, Sherwin Carl	
B.S. in I.E. 1953, North Dakota Agricultural College		B.B.A. 1950, LL.B. 1953, University of Wisconsin	China
Olsen, Robert Lee	Va.	LL.M. 1954, New York University	
B.S. in I.E. 1956, North Dakota School of Mines and Metallurgy		Perrin, Charles	Iowa
Opdycke, Robert Dale	Md.	A.B. 1942, University of Santo Thomas, Philippines	
A.B. 1957, Western Michigan College		Perkins, Julia Rote	Va.
O'Reilly, Hugh Thomas	D.C.	A.P. 1957, Cornell University	
B.S. 1944, Georgetown University		Peron, Robert R.	Md.
O'Rourke, Francis James	Mass.	B.S. 1940, Georgetown University	
B.S. 1942, Northeastern University		Perry, Elmer Leroy	Va.
Ottman, Milton Frederick, Jr.	Va.	A.B. 1941, Louisiana College	
A.B. 1956, Johns Hopkins University		Perry, Oscar Eugene	
P		B.C.E. 1945, Georgia Institute of Technology	Va.
Page, Robert Eugene	Ill.	Perry, Stanley Durward	
A.B. 1945, Illinois Wesleyan University		A.B. 1955, The George Washington University	D.C.
Pagano, Robert Randolph	Md.	Perry, William Dial	Texas
B.S. 1914, University of Illinois		A.B. 1941, Pennsylvania University	
Pagano, Patricia Ann	Va.	Perry, Robert Gates	D.C.
B.S. in Ch. E. 1951, Case Institute of Technology		B.S. in M.E. 1948, University of Texas	
Pagano, Margaret Mary	D.C.	Perry, Richard	Va.
A.B. 1941, Trinity College		B.S. 1947, University of Pennsylvania	
LL.B. 1945, The George Washington University		Petersen, Thomas Leo	
		B.S. 1956, Stanford University	

Ready, Dudley Thurston	D.C.	Robinson, Robert Henry	Pa
A.B. 1954, Norwich University		B.S. in Ch.E. 1956, Lehigh University	Va
Reason, Ronald William	D.C.	Rodgers, John Edward	
B.S. 1958, University of Missouri		LL.B. 1949, Vanderbilt University	Ky
Reitor, Alfred Rozier	Md	Rodgers, John Ferguson	Mo
J.L.B. 1952, American University		A.B. 1956, University of Louisville	
A.B. in Govt. 1955, The George Washington University		Rogers, John Torrey	
Reid, William McKeehan	Va	B.S. in M.E. 1956, University of Colorado	N.Y.
A.B. 1952, Colgate University		Rogers, Kenneth Norman	
Reidman, Robert Raymond	Mich	B.S. 1953, Ohio State University	Pa
B.S. in I.E. 1955, University of Michigan		Rohall, Donald Earl	
Reiser, Ralph Raymond	D.C.	A.B. 1956, University of Pittsburgh	Tenn
A.B. 1945, University of Washington		Rollinson, Mark	
Reeve, Edwin Forrest	D.C.	A.B. 1958, Duke University	N.J.
B.B.A. 1955, University of Miami		Romano, James Joseph, Jr.	
Reeves, Alvin Clyde	Md	M.E. 1956, Stevens Institute of Technology	D.C.
A.B. 1952, University of Maryland		Romanovski, Genevieve	
Reich, Marvin	Md	A.B. 1917, University of New Hampshire	N.H.
B.S. 1951, Polytechnic Institute of Brooklyn		Rose, Shep Nathan	
Reilly, James Donald	N.J.	B.S. in Phar. 1955, University of Georgia	Md
B.S. 1954, Franklin Marshall College		Rosen, Gerald Stuart	
Rempe, James Henry	Md	B.S. 1950, Michigan State University of Agriculture and Applied Science	D.C.
A.B. 1956, The George Washington University		Rosen, Marvin H.	
Reiner, Arnold Edward	Va	B.S. 1951, Pennsylvania State Teachers College, Kutztown	Md
B.S. in E.E. 1954, Purdue University		Rosen, Sam	
Reinson, Joseph Ned	D.C.	B.S. in Phar. 1950, The George Washington University	D.C.
B.S. 1955, University of Oregon		Rosenfeld, Hyman Louis	
Reisman, Larned George	Utah	A.B. in Govt. 1956, The George Washington University	Va
B.S. 1948, University of Utah		Rose, John, Jr. and Edwin	Conn
Reisner, S. Jesse	N.Y.	B.S. 1955, Washington University	
A.B. 1958, The George Washington University		Rosenstein, Irwin Bennett	D.C.
Reynolds, William Carter	Pa	B.S. 1952, University of Pennsylvania	
B.S. in M.E. 1957, Swarthmore College		Rosenstein, Joel Bruce	Va
Rhodes, Dale Russell	Wis	B.S. 1957, University of Maryland	
A.B. 1956, University of Wisconsin		Rotert, Warren Herbert	Va
Rhodes, Rexa Gale, Jr.	Texas	B.S. in I.E. 1952, Lafayette College	
B.S. 1954, Texas Technological College		Rothsch, Thomas Jefferson	Pa
Rhodes, George Francis, Jr.	N.Y.	B.S. 1955, University of Maryland	
B.B.A. 1955, Niagara University		Rowlands, Howard	Maine
Rhodes, Suzanne Virginia	D.C.	A.B. 1956, Pennsylvania State University	
A.B. 1948, I.D. 1957, The George Washington University		Roy, Raymond Lionel	N.M.
Ridley, James	Pa	A.B. 1951, Colby College	
A.B. in Govt. 1957, The George Washington University		Roybal, Ben Frank	N.M.
Ridgway, James Earl, Jr.	Ind	A.B. 1956, New Mexico Highlands University	
A.B. 1957, Northwest Nazarene College		Rubin, Morris	N.J.
Rigdon, Weyland Henry	Va	B.B.A. 1956, Wake Forest College	
B.S. 1956, Clemson Agricultural College		Rubin, Lonnie Bruce	Maine
Risinger, Vanna John	Md	B.S. 1954, University of Maryland	
Diploma in Law 1952, LL.M. 1943, University of Iowa, Iowa City		Rudman, Paul Lewis	
Dr. Jur. Pol. 1945, University of Jena, Germany		A.B. 1957, Yale University	Va
M.C.L. (Am.Pr.) 1956, The George Washington University		Ruppert, Thomas Otto, Jr.	Md
Rine, Carl E.	Va	A.B. in Govt. 1957, The George Washington University	
B.S. 1950, Madison College		Rusin, Robert Heinrich	Calif
Ritz, Marie Magdalena	Pa	A.B. 1956, The George Washington University	
A.B. 1957, The George Washington University		Russell, Carlton Eugene	Ge
Riark, Mary Trifant	Va	B.S. 1952, U. S. Coast Guard Academy	
A.B. 1945, Tulane University		Russell, William Don	
Roberts, Charles Franklin	Wash	A.B. 1958, The George Washington University	Va
A.B. 1957, Washington State College		Rutledge, Lyman Dewayne	
Robertson, James Colvert	D.C.	B.Ch.E. 1953, Texas Agricultural and Mechanical College	
B.S. 1957, University of Maryland			
Robinson, Charles Augustus, Jr.	Va		
B.E.E. 1950, University of Virginia			

The Law School

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Rykhus, Douglas Joseph A.B. in Govt. 1951, The George Washington University Ratlowski, Francis Leon B.S. 1955, Montana School of Mines	Md Md	Sutnode, Richard Willis A.B. 1955, University of Michigan Schaeberg, Harold Sidney A.B. in Govt. 1957, The George Washington University Schnell, William Newman A.B. 1955, University of Illinois Schooner, Russell L. A.B. 1954, University of Nevada Schon, Jean B.E.E. 1956, Renaissance Polytechnic Institute Scholman, Margaret Bernick A.B. 1955, The George Washington University Schultz, James Clarence B.S. 1957, University of Nebraska Schwartz, Alfred William B.S. 1946, Lewis and Clark College Schwartz, Martin Pearl B.S. 1956, College of the City of New York Schwartz, Arthur B.S. in E.E. 1958, Iowa State College Schwartz, Charles H. B.S. in E.E. 1958, Israel Institute of Technology Schwartz, Isaac A.B. in Govt. 1957, The George Washington University Schwartz, Thomas Charles B.S. 1955, Michigan College of Mining and Technology Schwark, Melvin Ramon A.B. 1955, Nebraska Wesleyan University Scott, Kenneth John A.B. 1955, Harvard University Scott, William Alexander A.B. 1955, Cornell University Seale, John Henry B.S. in E.E. 1954, Carnegie Institute of Technology Seale, Donald Henry A.B. 1957, The George Washington University Schulman, Aaron Abramson B.Litt. 1954, LL.B. 1956, Ateneo de Manila Sebastian, Lemmy Ansol B.S. 1955, Arkansas State Teachers College Seeborg, Fred Allen B.S. in E.E. 1957, University of Tennessee Seiler, William B. A.B. 1955, University of Miami Seidman, Edmund Benjamin A.B. 1955, Pennsylvania State University Seiler, Donald Wayne, Jr. A.B. 1955, College of William and Mary Selman, Donald Joseph B.S. 1955, University of Connecticut Sensiman, Edward Jr. A.B. in Govt. 1955, The George Washington University Sever, Paul Edgar B.S. 1955, Carnegie Institute of Technology Seaton, William McClure B.S. 1955, East Tennessee State College	Md D.C. Ill. Nev. N.Y. D.C. Neb. Va. N.Y. Neb. D.C. D.C. Ill. N.Y. D.C. D.C. Va. Ill. Va. N.Y. D.C. N.Y. Philippines Ark. Conn. Fla. N.J. Va. N.Y. Va. Tex. Va.
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Sewell, Norman Lewis A.B. 1935, Morris Harvey College	D.C.	Skovran, Nicholas B.S. 1950, M.S. 1952, Pennsylvania State University	Va.
Sharon, John Hurlford A.B. 1940, Princeton University	Md.	Slabach, Stephen Hall B.S. 1957, Northwestern University	Okla.
Sharp, Melvin B.S. in E.E. 1957, Drexel Institute of Technology	Pa.	Slattery, David Anthony B.S. 1948, Georgetown University	D.C.
Sharpe, Albert Pancoast III B.S. 1966, Case Institute of Technology	Ohio	Sloat, Jonathan Welsh I.L.B. 1956, The George Washington University	D.C.
Shoble, John Howard III A.B. 1942, Williams College	Va.	Small, Dale Richard B.Arch. 1951, University of Michigan	Mich.
Shelfman, Ivan Jay B.S. 1954, University of Maryland	D.C.	M.S. in Eng. 1954, Massachusetts Institute of Technology	
Sherk, Kenneth John B.S.C. 1955, Iowa State University	Iowa	LL.B. 1958, The George Washington University	
Shierling, Fred Willie B.S. 1957, University of Tennessee	D.C.	Smegal, Thomas Frank, Jr. B.S. in Ch.E. 1957, Minnesota College of Mining and Technology	Miss.
Sherman, Edward Lawrence A.B. 1951, A.M. 1951, Roosevelt University	Md.	Smethurst, Raymond Stevens, Jr. B.Met.E. 1958, Cornell University	D.C.
Sherman, Neil B.S. 1958, American University	D.C.	Smith, Alfred Emanuel B.S. in E.E. 1956, University of South Carolina	Va.
Sherrin, Vincent Jerome A.B. 1951, Western Kentucky State College	Ky.	Smith, Donald LeRay B.S. 1954, Iowa State College of Agriculture and Mechanic Arts	Iowa
Shields, Daniel Wooley A.B. 1949, Princeton University	Md.	Smith, James Clarence A.B. 1956, University of Florida	Fla.
Shouette, Louis Edwin, Jr. B.S. 1951, Georgetown University	Md.	Smith, John Gordon B.S. 1955, Columbia University	N.Y.
Showalter, Carl Rolston B.S. 1951, Madison College	Va.	Smith, John Henry B.S. 1955, U.S. Naval Academy	Va.
Shultz, George Patrick B.S. 1948, University of Illinois	Ill.	Smith, Mary Louise B.S. 1926, University of Chicago	Ill.
Sidel, Jerome Mark B.S. 1957, University of Connecticut	D.C.	A.M. in Ed. 1953, The George Washington University	Va.
Siden, William John, Jr. A.B. 1957, DePauw University	N.Y.	Smith, Michel Frans A.B. 1947, A.M. 1953, University of Texas	
Siegel, Simon Lee B.S. 1954, The George Washington University	Md.	Smith, Niza Oberlene A.B. in Govt. 1948, The George Washington University	D.C.
Siegel, Ralf Hermann Artur Oskar Diplom Geophysiker 1950, University of Bonn, Germany	D.C.	Smith, Noel Irving B.S. 1954, Iowa State College of Agriculture and Mechanic Arts	Iowa
Siegent, Richard Roland LL.B. 1957, University of Maryland	Md.	Smith, Raymond Ritter B.S. 1958, Georgetown University	Md.
Silver, Robert Francis A.B. 1951, University of Virginia	Mont.	Smith, Robert Warren B.E.E. 1955, Rensselaer Polytechnic Institute	Md.
Simmons, William James, Jr. B.S. in E.E. 1957, University of Pittsburgh	Va.	Smith, Warrington Gilmore B.S. 1940, M.B.A. 1950, University of Maryland	Md.
Sincoff, Richard Joseph A.B. 1956, The George Washington University	Md.	Smith, William Andrew III B.M.E. 1950, Catholic University of America	D.C.
Singer, Donald James B.S. 1956, Montana State University	D.C.	Snardo, John Luis B.S. in Ch.E. 1953, University of Massachusetts	
Singman, Henry Dick B.S. in Phar. 1940, The George Washington University	Va.	Snider, Edwin Wallace A.B. 1947, Princeton University	Va.
Sippel, Kenneth Paul A.B. 1950, University of California	Md.	Snider, Dennis Thomas A.B. 1957, University of Maryland	Md.
Sitler, Charles Arthur LL.B. 1948, University of Kentucky	Ga.	Snyder, George Rudolph A.B. 1954, Pennsylvania State University	Pa.
Sitton, Paul Lyon A.B. 1948, Emory University A.M. 1950, University of Pennsylvania	Md.	Snyder, Marvin B.L.E. 1954, Cornell University	D.C.
Sixbey, Daniel Warren A.B. 1954, University of Maryland	Va.	Snyder, Rouse Wade, Jr. A.B. 1954, Dickinson College	Va.
Skeer, William Thomas A.B. 1957, University of Texas	N.Y.	Solter, Milton Woodson A.B. in Govt. 1950, The George Washington University	
Skyles, George Arley B.S. 1952, American International College			

Somerville, Harrison, Jr. B.S. in Comm. 1955, Washington and Lee University	D.C.	Stone, Samuel Beckner B.S. in E.E. 1955, Virginia Polytechnic Institute	Va.
Sox, John Bernard B.S. in E.E. 1957, University of Pittsburgh	Pa.	Stone, Steven Faraday B.Ch.E. 1957, Rensselaer Polytechnic Institute	Va.
Sovern, Maurice Alan B.S. 1951, Purdue University	N.Y.	Strand, Henry Joseph A.B. 1954, North Central College, Ill.	Id.C.
Spaeth, Earl Chester A.B. 1945, Oberlin College Ph.D. 1949, University of California at Los Angeles	Va.	A.M. 1959, University of Chicago	
Spence, Hamilton Michael A.B. 1957, University of Idaho	Idaho	Strompf, Jan Arthur B.S. 1954, University of Maryland	Md.
Spencer, John Richard B.S. 1949, University of Illinois	Va.	Sullivan, Dorothy Mae A.B. 1957, University of Florida	Fla.
Spencer, Waverly D. A.B. 1957, Eastern Michigan College	Mich.	Sullivan, Robert Cecil B.S. 1955, Brown University	R.I.
Spiegel, Joseph Ben A.B. 1957, College of the City of New York	N.Y.	Sullivan, Vincent Edward B.Ch.E. 1955, Villanova University	Calif.
Sproull, Jerry Lynn B.S. in Ch.E. 1952, Grove City College	Pa.	Sullivan, Robert Harold B.S. in E.E. 1958, Worcester Polytechnic Institute	Mass.
Stafford, Paul Gordon A.B. 1956, University of Maryland	N.J.	Sutcliffe, Sam Lee B.S. in B.A. 1957, Ohio State University	Pa.
Stall, Robert Frederick B.S. 1951, Washington College	Pa.	Sutherland, Malcolm Livingston B.S. 1959, Carnegie Institute of Technology	Mass.
Stancavage, William Harold B.S. in Ch.E. 1955, University of Southern California	Va.	Sutherland, Richard Clinton II B.S. 1955, Virginia Military Institute	Va.
Stanley, Frank Leslie B.S. 1959, University of Illinois	D.C.	Sutler, Marshall Wayne B.S. in Ch.E. 1954, University of Illinois	Pa.
Stapp, George Nathan A.B. 1955, University of Michigan	Mich.	Sutton, William Joseph, Jr. A.B. in Comm. 1957, The George Washington University	Pa.
Starnes, Edward Morris A.B. in Comm. 1954, The George Washington University	D.C.	Swackhamer, David Arnold A.B. 1954, Stanford University	Mass.
Starnes, James Everett B.S. in M.E. 1957, North Dakota Agricultural College	D.C.	M.S. 1959, University of Wisconsin	
Stauder, Robert Paul A.B. 1951, University of Wyoming	Va.	Sweetser, Michael Jay B.E. 1957, Yale University	N.Y.
Stearns, Mason Cole B.S. 1955, American University	Wis.	Swigart, Edmund Morris B.S. 1959, The George Washington University	Va.
Stearns, George John A.B. 1955, Centre College	D.C.	Switzer, William Edmund A.B. 1955, University of New Mexico	N.M.
Steffens, Victor Lyman A.B. 1955, University of Colorado	Ky.	Sylvester, Robert Russell B.F.A. 1959, Tulane University	D.C.
Steele, Kenneth Monte A.B. 1955, Morgan State University of Agriculture and Applied Science	D.C.	A.M. in Comm. 1961, The George Washington University	
Steele, Charles Alan B.S. 1954, Duke University	Va.	Silverstein, David Elmer B.S. 1952, Murray State College	Md.
Steele, Murray Robert B.S. 1951, D.C. Teachers College	Md.		
Steele, Herman I. B.S. in E.E. 1957, Drexel Institute of Technology	D.C.	T	
Steele, Steven B.S. 1958, New York University	D.C.		
Steele, Beverly Joan B.S. 1959, Brigham Young University	Idaho	Takao, Frank Takao A.B. 1959, University of Hawaii	Hawaii
Steele, William Raymond A.B. 1957, St. Mary's College	Mich.	Tamplin, Thomas James B.S.E. 1957, University of Pittsburgh	Va.
Steele, Robert Scott A.B. 1958, High Point College	Va.	Tate, William Anthony, Jr. B.S. 1951, M.S. 1957, University of Notre Dame	N.Y.
Steele, William John B.S. 1957, University of Wisconsin	D.C.	Teplitz, Jerome Marvin B.S. in Ch.E. 1957, Drexel Institute of Technology	Pa.
Steele, James Daniel, Jr. B.S. in E.E. 1951, Tulane University	Va.	Terry, Ben Albert B.S. 1955, University of Buffalo	D.C.
		Terry, David Thomas B.S. in Ch.E. 1956, Purdue University	Ind.
		Terman, Louise Anderson B.S. 1954, University of Pennsylvania	Md.
		Teutner, David B.S. in E.E. 1955, Newark College of Engineering	Va.
		Thatcher, Gordon Sweeney B.S. 1955, Rebs College	Idaho

Thoden, Richard John	Va	Tupman, Wilbur Crandell	Va
A.B. 1957, University of Virginia		B.L. 1922, Georgia Institute of Technology	
Thomas, Carl Otis	D.C.	Turmer, Mary Johnston	D.C.
B.S. 1917, Texas College of Arts and Industries		A.B. 1911, The George Washington University	
Thomas, Dudley Breckinridge	N.J.	Turney, Jack Rush	Md.
A.B. 1955, Washington and Lee University		A.B. 1926, Western Maryland College	
Thomas, Harrison Wendell	D.C.	U	
B.S. 1954, Maryland State Teachers College		Ulkema, John Klaus	Va
Thomas, John George	Md.	B.S. in M.E. 1957, University of Michigan	
B.B.A. 1964, University of Miami		Upshaw, William Francis	Pa.
Thomas, Richard Marvel	Conn.	B.S. 1951, M.S. 1954, Florida State University	
B.S. 1911, U. S. Coast Guard Academy		Urbach, Peter Brock	N.Y.
Thompson, John Charles	Va.	B.S. in E.E. 1957, Carnegie Institute of Technology	
B.S. 1957, University of Rochester		V	
Thompson, Richard Keith	Ind.	Vail, Thomas L. C.	Va
B.S. 1960, Butler University		A.B. 1955, The George Washington University	
Thompson, Robert	Ill.	Vakos, George William	Va
B.S. 1954, University of Illinois		A.B. 1954, College of William and Mary	
Thornton, Leonard Henry	D.C.	Vance, Anthony Charles	Va
A.B. 1957, University of Vermont		B.S. 1954, Pennsylvania State University	
Tidd, Jay Thomas	Conn.	Vandenburg, John Percy	Md.
B.S. 1949, University of Nebraska		B.S. in E.E. 1956, University of Michigan	
A.M. 1950, University of Denver		VandeSande, George	M
Tiedt, Frederick Clyde	Va	B.S. in E.E. 1948, University of Michigan	
B.F.A. 1951, Westminster College		Van Horn, Robert Means	
M.B.A. 1954, Ohio State University		A.B. 1956, The George Washington University	N.J.
Tiedt, Thomas E. Raker	D.C.	Van Kirk, Roger Alan	D.C.
B.S. 1954, University of Maryland		B.S. in E.E. 1957, University of Vermont	
Tischler, Charles Meile	Pa.	Van Sanford, Gordon Myron	
A.B. 1954, M.S. 1954, Columbia University		A.B. in Govt. 1949, J.D. 1954, The George Washington University	Ohio
Tolford, John Charles	D.C.	Vassil, John Charles	
A.B. 1954, University of Michigan		B.S. in Ch.E. 1952, Carnegie Institute of Technology	La
Tollberg, Stanley Hamilton	Md.	Velasco, Juan Argote	Ill.
B.S. 1957, University of Maryland		B.F.A. 1954, Tulane University	
Toothman, Byron Ramsey	W. Va.	Velde, Richard W.	N.M.
A.B. 1946, Fairmont State College		B.S. 1954, A.M. 1954, Bradley University	
A.M. 1948, West Virginia University		Verkler, Jerry Thomas	D.C.
Torrey, Norman Gilbert	D.C.	Vetter, Charles Thomas, Jr.	
B.S. 1951, The George Washington University		A.B. 1946, Hamilton College	
Torrence, Dale Owen	N.C.	J.L.B. 1953, National University	Va
A.B. 1956, University of North Carolina		Vincenzo, Nancy Elspeth	
Tratt, Tin Vo	Vietnam	A.B. 1954, Morehead College	I
Diploma of Licence in Law 1951, University of Paris, France		A.M. 1954, University of Virginia	
Tremain, Kenneth Dale	Ohio	V. Lora, Robert Vernon	N.Y.
B.S. 1956, Purdue University		B.M.E. 1957, General Motors Institute	
Trimas, Marian	Pa.	V. Lora, James V. Lora	Va
B.S. in I.E. 1956, Pennsylvania State University		A.R. 1950, University of Wisconsin	
Tripp, Turner Clarence	Md.	V. A. Franklin Joseph	Tenn.
B.S. in B.A. 1947, New York University		B.S. 1957, Municipal University of Omaha	
Troiano, Frank Philip	N.J.	V. A. Jack Wendel	
A.B. 1950, University of Maryland		B.S. 1957, Tennessee Polytechnic Institute	
Troy, Richard Gordon	Va	W	
B.S. 1954, University of New Hampshire		Wade, Manley Burt	Hawa.
Trusdale, Gordon James	N.D.	A.B. 1951, Pacific Union College	Utah
B.S. in P.S. 1957, Georgetown University		Wadsworth, Harold Wayne	
Troost, Natalie	D.C.	B.S. 1952, Utah State University of Agriculture and Applied Science	Va
A.B. 1947, A.M. 1950, Columbia University		Wagner, John Henry	
Troy, Stella Carol	Va	A.R. 1957, University of South Dakota	
A.B. 1946, University of Michigan			
Truick, David Latta	S.C.		
B.S. 1956, Clemson Agricultural College			
Trust, Fred Eugene	Va		
A.B. 1958, Pennsylvania State University			

Waker, Sidney Joseph B.S. 1942, Lorena College		Ill.	Weld, John Philip B.S. 1937, East Carolina College	N.C.
W.L.B. 1949, Miami University			Wendt, William Robert B.S. & M.E. and A.E. 1915, University of Wisconsin	Va.
Walt, Patricia Jaffe A.B. 1935, Lewis and Clark College	Oreg.		Wentz, Michael W. B.S. in E.E. 1948, Armour Institute of Technology	D.C.
Walters, Howard A.B. 1940, Columbia University	D.C.		Li, B. 1954, The George Washington University	
Walters, John Robert B.S. 1933, Georgetown University	Md.		Wexler, Robert Eugene A.B. 1934, University of South Dakota	D.C.
Waltman, Vera Melba A.B. 1939, A.M. 1951, University of Chicago	N.Y.		Wheeler, Albert Sheldon B.S. & C.E. 1936, University of Wisconsin	Va.
Ward, David Hugh B.S. 1957, Rensselaer Polytechnic Institute	Va.		Wheatley, Charles Henry III A.B. 1954, Western Maryland College	Md.
Ward, Joseph Leo A.B. 1934, University of Nevada	Nev.		Wheeler, Larry Myron B.E.A. 1954, University of Georgia	Ga.
Ward, Julia A.B. 1923, Ph.D. 1940, Bryn Mawr College	D.C.		Whitlock, Carl Simpson B.S. 1949, A.M. 1950, University of Arkansas	Ark.
Watkins, Richard Norman B.S. 1950, Indiana Institute of Technology	D.C.		Whitman, Fred Smith, Jr. B.C.E. 1937, North Carolina State College	N.C.
Watson, Eric Albert A.B. 1933, Municipal University of Wichita	Kans.		Whitman, Wayne Howard, Jr. A.B. 1933, Lincoln University	D.C.
Watson, William Franklin, Jr. A.B. 1934, Stanford University	Fla.		White, Adam Thomas, Jr. B.S. & C.E. 1947, University of Arizona	Ariz.
Watts, E. George William B.S. & E.E. 1939, Duke University	Va.		White, James Patrick A.B. 1933, J.D. 1956, State University of Iowa	Iowa
Aspermann, David Stanley B.S. 1957, Indiana University	D.C.		White, Wayne Day A.B. 1931, Franklin Young University	Ind.
M.B.A. 1956, University of Pennsylvania			White, Peter Van Dyke B.S. & C.E. 1939, Lehigh University	Va.
Waterval, Richard Albert A.B. 1952, University of Maryland	Va.		Whitlock, William August, Jr. B.S. 1937, Miami University	Va.
Watkins, William Tatum A.B. 1930, The George Washington University	Fla.		Whitlock, Arthur E. B.S. 1933, Cornell Institute of Technology	Pa.
Watson, Robert Carlisle A.B. in Chem. 1937, The George Washington University	Va.		Whitman, Boris John B.S. 1937, Tennessee Polytechnic Institute	Tenn.
Watson, William Edmund A.B. 1930, West Virginia Wesleyan College	W.Va.		Wicks, William Lamb A.B. 1942, State University of Iowa	Va.
Watson, James Guthrie B.S. 1934, Case Institute of Technology	Ohio		Wierle, Helen Barbara A.B. 1941, Syracuse University	D.C.
Watson, Lyda Marion, Jr. A.B. 1935, The George Washington University	Va.		Williams, Jack Elmer A.B. 1937, Pennsylvania State University	Pa.
Watt, James Richard B.S. 1937, Elizabethtown College	Md.		Williams, James William B.S. in E.E. 1938, Vanderbilt University	Va.
Watt, Harold A.B. 1939, University of Alabama	N.Y.		Williams, Melvin Pearson B.E.E. 1937, Rensselaer Polytechnic Institute	Conn.
Watt, Harold Lloyd A.B. 1932, University of North Carolina	N.C.		Williams, Roger A.B. 1932, University of North Carolina	Va.
Wagner, Henning Law Degree 1938, University of Bonn, Germany	Germany		Williams, Columbia Pryse A.B. 1935, Vassar College	Md.
Wagner, Robert George B.S. 1937, Columbia University	D.C.		Williams, Harold Anthony B.S. & M.E. 1938, University of Wisconsin	Va.
Weinert, Lea J. B.S. & M.E. 1956, University of Pennsylvania	Pa.		Williamson, Lewis Elbert A.B. 1931, Benning Nazarene College	Va.
Weinstein, Louis B.S. & E.E. 1955, University of Pennsylvania	Pa.		Williamson, James Edward A.B. in B.A. 1937, Idaho State College	Idaho
Weinstein, Paul Harold B.S. 1936, Washington and Lee University	D.C.		Willmott, Joseph Nelson B.S. 1936, Idaho State College	D.C.
Wells, Paul Hesse A.B. in Govt. 1957, The George Washington University	D.C.		Willoner, Ronald Andrew A.B. 1933, University of Maryland	Md.
Wells, Pierre Robert, Jr. A.B. 1935, University of Michigan	D.C.		Wilson, Leonard Alfred, Jr. B.M.E. 1937, University of North Carolina	N.C.
			Wilson, George Frank, Jr. B.S. 1931, Florida State University	Fla.

Wilson, Edwin Paul	Va.	Y	
A.B. 1931, University of Portland			N.J.
Winston, Joan Lee	D.C.	Yampaglia, Emil Joseph	
A.B. 1954, Columbia University		A.B. 1952, University of Maryland	Fla.
Wise, Robert Wayne	Iowa	Yancey, Quillian Sanchez	
B.S. 1956, McPherson College		B.S. 1949, Florida Southern College	Fla.
Wisecarver, Betty Marie	D.C.	Yeager, Arthur George	
A.B. 1957, University of Virginia		B.E.E. 1956, University of Florida	Pa.
Witteman, Morris	Md.	Yesson, Charles Joseph	
B.S. in Ch.E. 1955, Drexel Institute of		B.S. 1954, Pennsylvania State Teachers	
Technology		College, Bloomsburg	N.Y.
Wiser, Clifford Lawrence	Md.	Yodice, John Salvatore	
B.S. 1953, University of Maryland		A.B. 1954, Brooklyn College	Ala.
Wohl, Paul	N.Y.	York, E. T., Jr.	
A.B. in Govt. 1954, The George		B.S. 1943, M.S. 1946, Alabama	
Washington University		Polytechnic Institute	
Wolf, Fred Fuhrman	D.C.	Ph.D. 1949, Cornell University	Calif.
LL.B. 1952, Harvard University		Young, Truman Richards	
Wolfe, Alan David	N.Y.	LL.B. 1952, The George Washington	
B.S. 1952, Queens College		University	Va.
M.S. 1956, Massachusetts Institute of		Youns, Maynard Lee	
Technology		A.B. 1954, Kalamazoo College	
Wolfe, Franklin David	D.C.	Z	
B.S. in Ch.E. 1954, University of		Zemke, John Edmund	Va.
Maryland		A.B. 1955, Monmouth College	W.V.
Wong, James Aubrey	D.C.	Zakach, Paul, Jr.	
B.M.E. 1951, The George Washington		A.B. 1955, Maria Harvey College	Pa.
University		Zatonsky, Peter	
Woodward, Charles Carroll MacCubbin	Md.	B.S. 1954, University of Scranton	D.C.
B.S. in C.E. 1951, Virginia Military		Zerem, Leon	D.C.
Institute		Zichartz, Thomas Arthur	
Woulls, James	Va.	Ph.B. 1950, Marquette University	
A.B. 1954, Virginia Military Institute		LL.B. 1955, LL.M. 1957, Georgetown	Va.
University		University	
Worthington, Raymond Leroy	Md.	Zieg, Robert Lloyd	
B.S. 1941, University of Maryland		B.I.R. 1956, General Motors Institute	N.M.
Wray, James Creighton	N.Y.	Zimmer, Andrew Peter	
B.M.E. 1958, Villanova University		A.B. 1951, Harvard University	Va.
Wrenn, William Richard	Va.	Zimmerman, Jack Pearce	
B.S. 1951, High Point College		B.S. 1948, U. S. Naval Academy	N.Y.
Wright, Walter Vance	Va.	Zirpoli, Lewis V.	
B.S. 1956, Pennsylvania State University		B.Ch.E. 1955, Polytechnic Institute	D.C.
Wrubel, AnnLouise	Conn.	of Brooklyn	
A.B. 1954, Mount Holyoke College		Zugel, Francis Kopp	
Wunsch, Jan Maria	D.C.	B.S. in Eng. 1957, The George	N.Y.
LL.D. 1930, Charles University of		Washington University	
Prague, Czechoslovakia		Zwaben, Murray	
		B.S. 1952, M.S. 1955, New York State	
		Teachers College, Albany	

SUMMARIES OF REGISTRATION

SPRING SEMESTER 1957-58. SUMMER TERM 1958.
FALL SEMESTER 1958-59

GEOGRAPHICAL DISTRIBUTION OF STUDENTS

Alabama	4	North Carolina	15
Arizona	6	North Dakota	5
Arkansas	8	Ohio	35
California	17	Oklahoma	12
Colorado	3	Oregon	4
Connecticut	14	Pennsylvania	92
Delaware	5	Rhode Island	2
District of Columbia	256	South Carolina	5
Florida	26	South Dakota	8
Georgia	6	Tennessee	9
Hawaii	13	Texas	11
Illinois	27	Utah	17
Indiana	11	Vermont	4
Iowa	13	Virginia	335
Kansas	9	Washington	5
Kentucky	11	West Virginia	18
Louisiana	7	Wisconsin	8
Maine	6	Wyoming	4
Maryland	190	Hawaii	10
Massachusetts	19	Puerto Rico	2
Michigan	16	Canada	1
Minnesota	5	China	1
Mississippi	1	Germany	1
Missouri	11	Guam	1
Montana	3	Korea	1
Nebraska	6	Latvia	1
Nevada	10	Philippines	2
New Hampshire	3	Thailand	1
New Jersey	31	Turkey	1
New Mexico	9	Vietnam	1
New York	86		

GRADUATES OF COLLEGES REGISTERED IN THE LAW SCHOOL.

Alpha College	2	Arizona University of	0
Aron University of	1	Arkansas Agricultural and	
Arkansas Polytechnic Institute	2	Mechanical College	1
Arkansas University of	5	Arkansas State Teachers College	2
Augustus Magnus College	1	Arkansas University of	4
Albany College	3	Armour Institute of Technology	1
American International College	3	Ateneo de Manila, Philippines	1
American University	11	Augustana College	3
Antioch College	2	Bail State College	1
Antioch College	1	Barnard College	1

Bates College	1	Dayton, University of	1
Berlin, Technische Universität, Germany	1	Delaware, University of	1
Berlin, University of, Germany	1	Denison University	1
Bethany-Nazarene College	1	Denver, University of	1
Bonn University, Germany	1	DePauw University	1
Bordeaux, University of, France	1	Detroit College of Law	1
Boston College	1	Detroit, University of	1
Boston University	2	Dickinson College	1
Bowdoin College	2	Dist. of Columbia Teachers College	4
Bowling Green College of Commerce	1	Drexel Institute of Technology	1
Bowling Green State University	2	Dubuque, University of	15
Bradley University	5	Duke University	1
Brandeis University	2	Duquesne University	1
Brandeport, University of	2	East Carolina College	1
Bridham Young University	14	East Central State College	1
Brooklyn College	9	East Tennessee State College	1
Brooklyn, Polytechnic Institute of	4	Eastern Michigan College	1
Brown University	4	Elizabethtown College	1
Bryn Mawr College	1	Emory University	1
Bucknell University	1	Florida, College of	1
Buffalo, University of	4	Emerson, Francis, Alexandria, University of, Germany	1
Butler University	1	Furka College	1
California Institute of Technology	3	Evansville College	1
California, University of	6	Fairmont State College	1
California, University of, at Los Angeles	4	Far Eastern University, Philippines	1
Carnegie Institute of Technology	11	Florida Southern College	6
Carroll College	1	Florida State University	12
Case Institute of Technology	7	Florida, University of	7
Catawba College	1	Fordham University	1
Catholic University of America	6	Fort Hays Kansas State College	1
Central College	3	Franklin and Marshall College	1
Charles University of Prague, Czechoslovakia	1	Gannon College	4
Charleston, College of	1	General Motors Institute	179
Chicago, University of	2	George Washington University, The	34
Cincinnati, University of	5	Georgetown University	9
Citadel, The	2	Georgia Institute of Technology	7
Clark University	3	Georgia, University of	3
Clarkson College of Technology	1	Gettysburg College	1
Clemson Agricultural College	5	Golden Gate College	1
Colby College	2	Georgia University	1
Colgate Rochester Divinity School	1	Grinnell College	2
Colgate University	2	Grove City College	1
Colorado School of Mines	2	Guilford College	2
Colorado State College of Education	1	Hanilton College	1
Colorado, University of	8	Hamline University	1
Columbia University	26	Hampton-Simons College	1
Connecticut, University of	6	Harper College	18
Cosper Union	1	Harvard University	9
Cornell University	16	Haverford College	2
Dartmouth College	6	Hawaii, University of	1
		High Point College	1
		Holms College	1

Hood College	1	Maryland, University of	64
Howard University	1	Maryville College	3
Idaho State College	5	Masaryk University, Czechoslovakia	1
Idaho, University of	4	Massachusetts Institute of Technology	9
Illinois Institute of Technology	2	Massachusetts Maritime Academy	1
Illinois, University of	10	Massachusetts, University of	3
Illinois Wesleyan University	1	M. G. University, Canada	1
Indiana University	8	M. Master University, Canada	1
Inter-American University, Puerto Rico	1	M. Pierson College	3
Iowa State College of Agriculture and Mechanic Arts	9	Monash College	1
Iowa, State University of	7	Miami University	4
Iowa Wesleyan College	1	Miami University of	9
Istanbul University, Turkey	1	Michigan College of Mining and Technology	4
Jonestown College	1	Michigan State Normal College	1
Jowa, University of, Germany	1	Michigan State University of Agriculture and Applied Science	4
Johns Hopkins University	7	Michigan, University of	28
Kalamazoo College	1	Midbury College	1
Kansas City, University of	1	Minnesota College of Mining and Technology	1
Kansas State College of Agriculture and Applied Science	2	Minnesota State Teachers College, Moorhead	1
Kansas State Teachers College, Emporia	2	Minnesota, University of	4
Kansas, University of	11	Mississippi College	1
Kentucky, University of	6	Mississippi, University of	1
Kent State University	3	Missouri, University of	6
Knox College	1	Montana School of Mines	1
King Ferdinand I University of Cluj	1	Montana State College	1
Knox College	1	Montana State University	2
Lafayette College	7	Morgan State College	3
LaSalle College	1	Morris Harvey College	2
Latvia, University of	1	Mount Holyoke College	1
Lebanon Valley College	1	Mount St. Vincent College	1
Lehigh University	7	Murray State College	1
Lewis and Clark College	1	National University	1
Liberia, University of	1	Nebraska State Teachers College, Kearney	1
Licium Maria Nicara of And	1	Nebraska, University of	4
Linden University	1	Nebraska Wesleyan University	2
Linnell College	1	Nevada, University of	7
Louisiana College	1	New England College	1
Louisiana State University	1	New Hampshire, University of	8
Louisville, University of	1	New Mexico College of Agriculture and Mechanic Arts	1
Lowell Institute of Technology	1	New Mexico Highlands University	1
Loyola College	1	New Mexico, University of	7
Lwow, University of, Poland	1	New York College of the City of	11
Lynchburg College	1	New York State Maritime College	2
Madison College	2	New York State Teachers College, Albany	2
Madison College	1	New York University	12
Manitowish University	1	Newark College of Engineering	4
Marquette College	3	Niagara University	1
Marquette Seminary	4		
Maryland State Teachers College	1		

North Carolina, University of	11	St. Louis University	1
North Central College, Illinois	2	St. Mary's College	1
North Dakota Agricultural College	2	St. Mary's College, Kansas	1
North Dakota State School of Science	1	St. Olaf College	1
North Texas State College	2	St. Vincent College	1
Northeastern University	5	San Diego State College	1
Northern State Teachers College	1	San Jose State College	1
Northwest Nazarene College	1	Santo Thomas, University of, Philippines	1
Northwestern University	9	Scranton, University of	1
Norwich University	1	Seoul National University, Korea	1
Notre Dame, University of	3	Seton Hall University	1
Oberlin College	3	Siena College, St. Bernadine of	1
Ohio State University	19	Smith College	1
Ohio University	2	South Carolina State College	1
Ohio Wesleyan University	4	South Carolina, University of	1
Oklahoma State University	1	South Dakota School of Mines and Technology	1
Oklahoma, University of	9	South Dakota State College	1
Omaha, Municipal University of	3	South Dakota, University of	1
Oregon State College	3	South, University of the	1
Oregon, University of	3	Southern California, University of	1
Pacific College of the	1	Southern Illinois University	1
Pacific Union College	1	Stanford University	1
Palermo, University of, Italy	1	Stetson University	1
Paris, University of, France	2	Stevens Institute of Technology	1
Pazmany Peter University, Hungary	1	Swarthmore College	1
Pembroke College	1	Sweet Briar College	1
Pennsylvania Military College	1	Syracuse University	1
Pennsylvania State Teachers College, Bloomsburg	1	Talladega College, Alabama	1
Pennsylvania State Teachers College, Indiana	2	Tartu, University of, Estonia	1
Pennsylvania State Teachers College, Kutztown	1	Taylor University	1
Pennsylvania State University	37	Temple University	1
Pennsylvania, University of	16	Tennessee Polytechnic Institute	1
Pittsburgh, University of	18	Tennessee, University of	1
Portland, University of	1	Texas Agricultural and Mechanical College	1
Pott Institute	1	Texas College of Arts and Industries	2
Princeton University	8	Texas Technological College	5
Principia College	5	Texas, University of	1
Providence College	1	Texas Western College	1
Puerto Rico, University of	2	Thammasat, University of, Thailand	1
Purdue University	18	Thiel College	1
Queens College	5	Trinity College	1
Randolph-Macon College	2	Tufts University	5
Rensselaer Polytechnic Institute	22	Tulane University	1
Rhode Island, University of	1	Union University	5
Richmond, University of	1	U. S. Coast Guard Academy	1
Ricks College	1	U. S. Merchant Marine Academy	1
Rochester, University of	2	U. S. Military Academy	16
Roosevelt University	1	U. S. Naval Academy	2
Rose Polytechnic Institute	4	Ursala College	1
Rutgers University	6	Ursinus College	1

Utah State University of Agriculture and Applied Science	4	West Liberty State College	2
Utah, University of	10	Westmont College	1
Vanderbilt University	5	West Virginia Institute of Technology	2
Vassar College	1	West Virginia University	11
Vermont, University of	6	West Virginia Wesleyan College	3
Vienna, University of, Austria	1	Western Illinois State College	1
Villanova University	6	Western Kentucky State Teachers College	1
Virginia Military Institute	7	Western Maryland College	5
Virginia Polytechnic Institute	14	Western Michigan College	1
Virginia State College	1	Western Reserve University	1
Virginia, University of	19	Westminster College	1
Walsh College	1	Widata, Municipal University of	2
Wake Forest College	3	Wikes College	1
Washington College	2	William and Mary, College of	5
Washington and Lee University	7	Williams College	2
Washington Missionary College	3	Wisconsin State College, River Falls	1
Washington, State College of	1	Wisconsin, University of	16
Washington University	2	Wofford College	1
Washington, University of	8	Worster, College of	3
Wayne State University	1	Worcester Polytechnic Institute	1
Wayne University	1	Wyoming, University of	2
Webb Institute of Naval Architecture	1	Yale University	13
Wellesley College	1	Youngstown College	1
Wesleyan University	2		

SUMMARY OF LAW SCHOOL REGISTRATION

FALL SEMESTER 1958-59

	Men	Women	Total
First Year	423	23	446
Second Year	368	20	388
Third Year	252	12	264
Candidates for degree of Master of Laws	36	1	37
Candidates for degree of Master of Comparative Law (American Practice)	2	3	5
Candidates for degree of Master of Comparative Law (American Practice)	5	..	5
Candidates for degree of Doctor of Juridical Science	5	..	5
Unclassified	9	1	10
TOTAL	1040	60	1100

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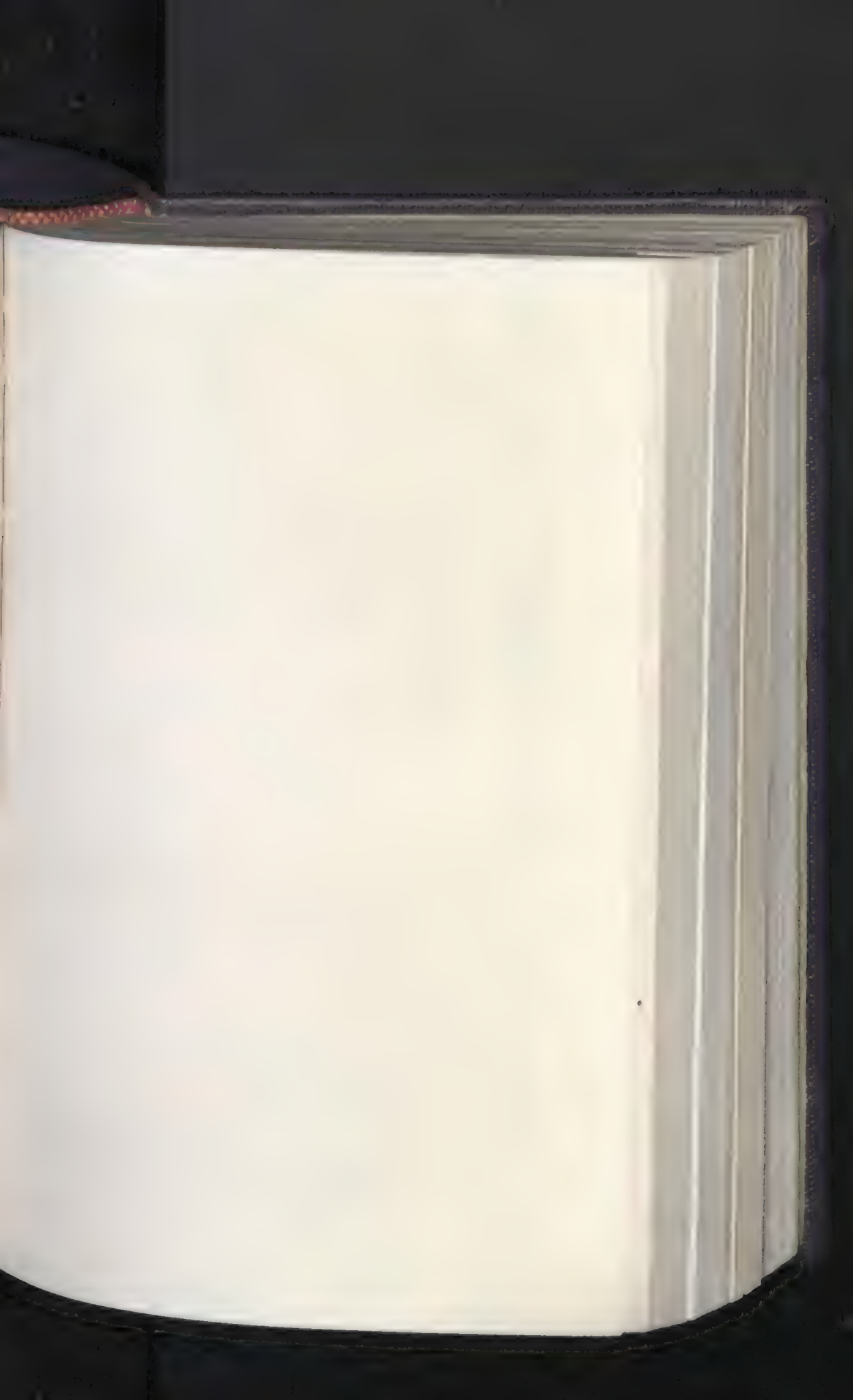
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TOMPKINS HALL OF ENGINEERING.



THE SCHOOL OF ENGINEERING
1959-60

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CALENDAR

1959-60

Date	Day	Occasion
1959 FALL SEMESTER: Sept. 7-16	Monday through Wednesday	Advising for freshmen, sophomores, and all entering students
Sept. 10	Thursday	Orientation assembly for all new students
Sept. 11 and 14	Friday and Monday	Placement tests
Sept. 15	Tuesday	Curriculum assemblies • Examinations for students who wish to qualify for advanced courses or waive curriculum requirements
Sept. 15 and 16	Tuesday and Wednesday	Graduate registration
Sept. 17 and 18	Thursday and Friday	Undergraduate registration
Sept. 21	Monday	Academic year begins
Oct. 2	Friday	Last day for filing problem subjects by candidates for Master's degrees to be conferred in February
Oct. 17	Saturday	Fall Convocation
Nov. 11	Wednesday	Veterans Day. Holiday
Nov. 26-28	Thursday through Saturday	Thanksgiving recess
Dec. 12	Saturday	Graduate Record Examination
Dec. 21-Jan. 2	Monday through Saturday	Christmas recess
1960 Jan. 4	Monday	Classes resume Last day for receiving problems of candidates for Master's degrees to be conferred in February
Jan. 11	Wednesday	Last day of classes for the fall semester
Jan. 18-26	Monday through Tuesday	Examination period
Jan. 18-27	Monday through Wednesday	Advising for freshmen, sophomores, and all entering students
Jan. 21	Thursday	Placement tests

• All new students are required to attend one Curriculum Assembly

Date	Day	Occasion
SPRING SEMESTER:		
Jan. 26 and 27	Tuesday and Wednesday	Graduate registration
Jan. 27	Wednesday	Examinations for students who wish to qualify for advanced courses or waive curriculum requirements
Jan. 28 and 29	Thursday and Friday	Undergraduate registration
Feb. 1	Monday	Classes resume
Feb. 12	Friday	Last day for filing problem subjects by candidates for Master's degrees to be conferred in June
Feb. 22	Monday	Winter Convocation. Holiday
April 1	Wednesday	Applications for scholarships for 1960-61 should be filed
April 9	Saturday	Graduate Record Examination
April 15-20	Friday through Wednesday	Easter recess
April 29	Friday	Last day for receiving problems of candidates for Master's degrees to be conferred in June
May 11	Wednesday	Last day of classes for the spring semester
May 16-24	Monday through Tuesday	Examination period
May 29	Sunday	Baccalaureate Sermon
May 30	Monday	Memorial Day. Holiday
June 1	Wednesday	Commencement
SUMMER SESSIONS:		
June 13	Monday	Registration for eight-week term
June 14	Tuesday	Classes begin
Aug. 5	Friday	Eight-week term ends
		Last day for receiving problems of candidates for Master's degrees to be conferred in October
Sept. 22 and 23	Thursday and Friday	Registration for the fall semester of the academic year 1960-61

THE UNIVERSITY

THE BOARD OF TRUSTEES

The Board of Trustees of the University is composed of the President of the University ex officio and the following persons by election:

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 Wiley Thomas Buchanan, Jr.
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 Eugene Cassin Carusi, A.M., J.D.
 *Waston Davis, B.S. in C.E., C.E.
 R. Roy Dunn
 Charles Carroll Glover, Jr., A.M., LL.B., LL.D.
 Philip L. Graham, A.B., LL.B., L.H.D.
 *Brooks Hays, A.B., LL.B., LL.D.
 John Edgar Hoover, LL.M., LL.D.
 Frank Atherton Howard, B.S. in M.E., LL.B.
 Alfred Henry Lawson, LL.B., LL.D.
 John Keown McKee
 Benjamin Mosby McKelway, Litt.D.
 James Matlack Mitchell, A.M.
 Godfrey Leon Munter, A.B., LL.B., LL.D.
 *George Edward Muth, A.B., LL.B.
 *Miss Helen Newman, LL.M.
 *Frederick A. Reuter, M.D.
 Donald D'Arcy Shepard, LL.B.
 Carleton D. Smith
 Sidney William Souers, A.B., LL.D.
 Samuel Spencer, LL.B.
 L. Corrin Strong, Ph.B., LL.D.
 James Edwin Webb, A.B., LL.D.
 Alexander Wetmore, Ph.D., Sc.D.
 Lloyd Bennett Wilson
 Watson W. Wise, Ph.B.

* Nominated by the alumni

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Mrs. Wilbur John Carr

Mrs. Joshua Evans, Jr., A.B., Ed.D.

Ulysses S. Grant, 3d, B.S., Graduate United States Engineers School
LL.D., Sc.D.

Gilbert Grosvenor, A.M., LL.D., Litt.D., Sc.D.

Walter Rupert Tuckerman, A.B., LL.B., LL.D.

Charles Stanley White, M.D., Sc.D.

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THE UNIVERSITY

Cloyd Heck Marvin, Ph.D., LL.D., *President of the University*
 Oswald Symister Colclough, B.S., LL.B., LL.D., *Dean of Faculties; Acting President of the University from January 28, 1959*
 Myrna Pauline Sedgwick, A.B., *Administrative Secretary*
 Henry William Herzog, B.S., *Treasurer*
 Claud Max Farrington, A.M., *Assistant to the President*
 Harold Griffith Sutton, M.S., *Director of Admissions*
 Fred Everett Nessell, A.B., *Registrar; Secretary of the Faculties*
 John Russell Mason, A.M., M.S. in L.S., *Librarian; Curator of Art*
 Burnice Herman Jarman, A.M., Ed.D., *Dean of the Summer Sessions*
 Benjamin Douglass Van Evera, Ph.D., Sc.D., *Dean for Sponsored Research*
 Mitchell Dreese, Ph.D., *Dean in the Office of the President*
 Virginia Randolph Kirkbride, A.M., *Director of Activities for Women*
 Don Carlos Faith, Ph.D., *Director of Activities for Men; Director of Veterans Education*
 Joseph Richard Sizoo, A.M., D.D., Litt.D., LL.D., L.H.D., S.T.D., *Director of University Chapel*
 Alan Thomas Deibert, A.M., *Adviser to Students from Foreign Countries*
 Richard Bernard Castell, A.B., M.D., *Director of Health Administration*
 Ruth Harriet Atwell, A.M., *Director of Women's Athletics*
 Robert Faris, B.S., *Director of Men's Athletics*
 Carl Swyter, B.S. in E.E., *Director of Air Science*
 John Francis Latimer, Ph.D., *Assistant Dean of Faculties; University Marshal*

THE COLLEGES, SCHOOLS, AND DIVISIONS

George Martin Koehl, A.M., *Dean of the Junior College*
 Calvin Darlington Linton, Ph.D., *Dean of Columbian College*
 Arthur Edward Burns, Ph.D., *Dean and Chairman of the Graduate Council*
 John Parks, M.S., M.D., *Dean of the School of Medicine*
 Louis Markey Mayo, B.S., LL.B., *Acting Dean of the Law School*
 Martin Alexander Mason, B.S. in Eng., Ing.-Dr., *Dean of the School of Engineering*
 Charles Watson Bliven, M.S., *Dean of the School of Pharmacy*
 James Harold Fox, A.M., Ed.D., *Dean of the School of Education*
 _____, *Dean of the School of Government*

* The Officers of Administration listed here are for the academic year 1958-59.

- Grover LaMarr Angel, A.M., Ed.D., *Dean of the College of General Studies*
- Elmer Louis Kayser, Ph.D., LL.D., *Dean of the Division of University Students*
- Warren Reed West, Ph.D., *Dean of the Division of Special Students*
- Victor Frederick Ludewig, A.B., B.S., *Administrator of the University Hospital*
- Angus MacIvor Griffin, Ph.D., *Associate Dean of the School of Medicine*
- Alvin Edward Parrish, M.D., *Associate Dean of the School of Medicine*
- John Gage Allee, Jr., Ph.D., *Associate Dean of the Division of University Students*
- William Lewis Turner, Ph.D., *Assistant Dean of the Junior College*
- Carr Bartleson Lavell, A.M., *Assistant Dean in the Junior College*
- Carville Dickinson Benson, A.B., LL.B., S.J.D., *Assistant Dean of the Law School*
- Carl Hugo Walther, B.E., M.C.E., *Assistant Dean in the School of Engineering*
- Robert Meyer Leonard, Ph.D., *Assistant Dean of the School of Pharmacy*
- Blake Smith Root, A.M., Ed.D., *Assistant Dean of the School of Education*
- Joe Lee Jessup, M.B.A., *Assistant Dean in the School of Government*
- Walter Harold Hayes, Jr., A.M., *Assistant Dean in the College of General Studies*

HISTORY AND ORGANIZATION

HISTORY

The idea of a university located in the Capital of the Nation was sponsored by George Washington, who during his public life urged the establishment of such an institution and who in his will left fifty shares of stock in the Potomac (Canal) Company for the endowment of a university to be established in the District of Columbia "to which the youth of fortune and talents from all parts thereof might be sent for the completion of their Education in all the branches of polite literature;—in arts and Sciences,—in acquiring knowledge in the principles of Politics & good Government".

It was George Washington's hope that the "General Government" would extend toward such an institution "a fostering hand". No steps were taken by Congress to carry out the provision of Washington's will, and the stock that he had bequeathed for the establishment of a university in the District of Columbia became valueless owing to the failure of the Potomac Canal properties.

Meanwhile, however, a movement was started by private persons under the leadership of Luther Rice to establish an institution of higher learning at the seat of the National Government for the education of the Baptist ministry and to afford general collegiate training. In 1819 an association was formed by Luther Rice, Obadiah B. Brown, Spencer H. Cone, and Enoch Reynolds for the purpose of raising funds to buy land for the use of the college.

A group of the Nation's leaders who were especially interested in Washington's idea became patrons of the college and contributed to funds raised for the purchase of land and erection of buildings. Among them were James Monroe, President of the United States; William H. Crawford, Secretary of the Treasury; John C. Calhoun, Secretary of War; William Wirt, Attorney General; Return J. Meigs, Postmaster General; and thirty-two members of the Congress.

Legally to implement the college a petition was made to Congress for the incorporation of "the General Convention of the Baptist Denomination in the District of Columbia for evangelical and literary purposes". This petition was denied by Congress, on April 26, 1820, because of its sectarian character.

Failing to obtain a denominational charter, members of the association enlarged their objective to embrace national aims, and with the sponsorship of Government leaders there was presented in Congress a bill for the incorporation of "the Columbian Society for literary purposes", it being proposed to realize in this way "the aspirations of Wash-

ington, Jefferson and Madison for the erection of a university at the seat of the federal government".

Acting upon this second petition, on February 9, 1821, Congress chartered Columbian College in the District of Columbia, inserting in the charter by special action the provision "That persons of every religious denomination shall be capable of being elected Trustees; nor shall any person, either as President, Professor, Tutor or pupil, be refused admittance into said College or denied any of the privileges, immunities or advantages thereof, for or on account of his sentiments in matters of religion".

Thus Columbian College in the District of Columbia was chartered by Congress as one of the early nonsectarian institutions of higher learning in the United States, under the distinguished favor of President James Monroe and members of his Cabinet.

A tract of approximately forty-seven acres, extending about one-half mile northwest of Boundary Street (Florida Avenue) between Fourteenth and Fifteenth Streets, was purchased and by 1822 the main building was completed sufficiently to use.

Two years later, when the first Commencement was held on December 15, 1824, Congress and the Supreme Court adjourned their sessions to enable their members to attend the exercises. President Monroe, John Quincy Adams, John C. Calhoun, Henry Clay, and the Marquis de Lafayette headed the eminent company in attendance.

By an act of Congress of March 3, 1873, the name of the college was changed to "Columbian University", in recognition of the enlarged scope of the institution. In 1884 the University was moved from its first location on "College Hill", now Columbia Heights, to the new University Hall built for it at Fifteenth and H Streets. Near-by buildings accommodated the School of Medicine and, somewhat later, the Law School.

For a period of six years, from 1898 to 1904, the University was placed under control of the Baptist Denomination. In 1904 an act restoring the original secular character of the University and authorizing change of name to The George Washington University was passed by Congress.

Subsequently all the colleges, schools, and divisions of the University except the School of Medicine were brought together in the area bounded by Nineteenth, Twenty-third, and G Streets, and Pennsylvania Avenue NW. The School of Medicine is situated on H Street between Thirteenth and Fourteenth Streets NW.

The endowment of the University is \$7,200,000.

THE COLLEGES, SCHOOLS, AND DIVISIONS

The George Washington University includes fourteen colleges, schools, and divisions, as follows:

The Junior College offers the work of the first two years of the four-

year college program in the liberal arts and sciences and two years of preprofessional work. Each of these curricula leads to the degree of Associate in Arts. It also offers two-year terminal curricula. Those in Accounting and Secretarial Studies lead to the degree of Associate in Arts; those in Home Economics and Physical Science lead to the degree of Associate in Science.

Columbian College offers the work of the junior and senior years of the four-year college program in the liberal arts and sciences leading to the degrees of Bachelor of Arts and Bachelor of Science. In cooperation with the Department of Pathology and the University Hospital, Columbian College offers a course in Medical Technology leading to the degree of Bachelor of Science in Medical Technology. It also offers the studies leading to the degrees of Master of Arts, Master of Science, and Master of Fine Arts.

The Graduate Council offers a program of advanced study and research leading to the degree of Doctor of Philosophy.

The School of Medicine offers work leading to the degree of Doctor of Medicine.

The Law School offers professional and graduate courses leading to the degrees of Bachelor of Laws, Juris Doctor, Master of Laws, Master of Comparative Law, and Doctor of Juridical Science.

The School of Engineering offers courses leading to the degrees of Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, Bachelor of Science in Engineering, Master of Science in Engineering, and Master of Engineering Administration.

The School of Pharmacy offers courses leading to the degrees of Bachelor of Science in Pharmacy and Master of Science in Pharmacy.

The School of Education offers undergraduate programs leading to the degrees of Bachelor of Arts in Education, Bachelor of Science in Home Economics, and Bachelor of Science in Physical Education, and graduate studies leading to the degrees of Master of Arts in Education and Doctor of Education.

The School of Government offers undergraduate programs of study in Foreign Affairs, Public Affairs, Accounting, Business Administration, and Statistics, leading to the degree of Bachelor of Arts in Government. Graduate work is offered leading to the following degrees: Master of Arts in Government in the fields of Foreign Affairs, Public Affairs, Economic Policy, Accounting, Business and Economic Statistics, Counseling and Psychometrics; Master of Arts in Public Administration; Master of Arts in Personnel Administration; Master of Business Administration; and Doctor of Business Administration.

The College of General Studies supplements the adult education pro-

gram of the University through its Off-Campus Division, Campus Division, and Division of Community Services.

The Division of University Students makes available courses for mature students, not candidates for degrees in this University.

The Division of Special Students makes available courses for students in the process of qualifying for degree candidacy.

The Division of Air Science offers a program of Air Force ROTC training which is integrated with the curricula of the colleges and schools of the University and leads to appointment as a commissioned officer in the United States Air Force Reserve.

The Summer Sessions.

ACADEMIC STATUS

The George Washington University is accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools. This is important to students who wish to transfer credits from one institution to another. The University is on the approved list of the American Association of University Women and is a member of the College Entrance Examination Board.

The School of Engineering is on the accredited list of the Engineers' Council for Professional Development.

LOCATION

The George Washington University is in downtown Washington four blocks west of the White House and east of the Potomac River with its extensive parkway. Readily accessible to the University are many of the departments of the Government, including the Department of State, the Department of the Treasury, the Department of Justice, the Department of the Army, the Department of the Navy, the Department of the Interior, the Department of Agriculture, the Department of Commerce, and the Department of Labor, as well as the National Archives, the Capitol, the Library of Congress, the National Academy of Sciences, the Pan American Union, the National Gallery of Art, and the Corcoran Gallery of Art.

GOVERNMENT

The government and general educational management of The George Washington University are vested in a self-perpetuating Board of Trustees, with the President of the University as a member ex officio. The members of the Board are named for a period of three years and are divided into three classes. The members of one class are elected at each annual meeting to fill the places of the members whose terms of office expire. Two members of each class are nominated by the Alumni Association.

THE SCHOOL OF ENGINEERING

1959-60

THE SCHOOL OF ENGINEERING

THE FACULTY AND STAFF OF INSTRUCTION*

MARTIN ALEXANDER MASON, B.S. in Eng., Ing.-Dr., *Dean of the School of Engineering*

CARL HUGO WALTHER, B.E., M.C.E., *Assistant Dean in the School of Engineering*

JACK EDWARD WALTERS, M.S. in M.E., Ph.D., *Director, Engineering Administration Program*

EMERITUS FACULTY

BENJAMIN CARPENTER CRICKSHANKS, B.S. in M.E.
Professor Emeritus of Mechanical Engineering in Residence

FREDERICK MORRIS FEIKER, B.S. in E.E., D.Eng.
Professor Emeritus of Engineering Administration

ROBERT GAY TRUMBULL, B.S. in C.E.
Professor Emeritus of Mechanical Engineering

ACTIVE FACULTY AND STAFF OF INSTRUCTION

GEORGE ABRAHAM, M.S.
Lecturer in Electrical Engineering

WILLIAM ALDERSON, M.S. in E.E.
Lecturer in Electrical Engineering

NORMAN BRUCE AMES, LL.B., E.E., M.S. in E.E., Dr. Sc. Techn.
Professor of Electrical Engineering

GALIP MEHMET ARKILIC, Ph.D.
Associate Professor of Civil Engineering

WILLIAM WALTER BALWANZ, B.E.E., M.S. in E.E.
Lecturer in Electrical Engineering

HAROLD JOSEPH BARNETT, Ph.D.
Professorial Lecturer in Engineering Administration

RAPHAEL DAVID CAHN, B.M.E.
Lecturer in Mechanical Engineering

* The Staff of Instruction listed here is for the academic year 1958-59.
The President of the University, the Dean of Faculties, the Dean and the Assistant Dean in the School, the Registrar of the University, the Director of Admissions of the University, the Professors, Associate Professors, Assistant Professors, and Instructors constitute the Faculty.

IRA HUBERT CISIN, Ph.D.

Professorial Lecturer in Engineering Administration

KENNETH SEYMOUR COLMEN, B.A.E., Ph.D.

Professorial Lecturer in Engineering Administration

CHARLES HENRY CONRAD, B.S. IN ARCH.

Professorial Lecturer in Civil Engineering

PAUL ARTHUR CRAFTON, B.M.E., Ph.D.

Associate Professor of Mechanical Engineering

LOUIS DEPIAN, Ph.D.

Associate Professor of Electrical Engineering

FREDERICK CHARLES DYER, M.B.A.

Professorial Lecturer in Engineering Administration

ERNEST FRANK, B.E.E., M.S. IN E.E., Ph.D.

Professor of Electrical Engineering, Executive Officer of the Department of Electrical Engineering

RALPH EDWARD FUHRMAN, B.S. IN C.E., M.S. IN ENG., D.ENG.

Professorial Lecturer in Civil Engineering

MARTIN AARON GARSTENS, A.M., Sc.D.

Lecturer in Engineering

NELSON THOMAS GRISAMORE, Ph.D.

Associate Professor of Electrical Engineering

JOSEPH ELIAS GUIDRY, B.E., M.S. IN E.E.

Lecturer in Electrical Engineering

FRANKLIN PORTER HALL, Ph.D.

Professorial Lecturer in Engineering Administration

KEITH CYRIL HARDER, Ph.D.

Professorial Lecturer in Engineering Administration

FOREST KLAIRE HARRIS, Ph.D.

Professorial Lecturer in Electrical Engineering

JAMES MILTON HEADRICK, M.S.

Lecturer in Electrical Engineering

ROBERT AARON HECHTMAN, M.S. IN C.E., Ph.D.

Professor of Civil Engineering, Executive Officer of the Department of Civil Engineering

LAURENCE HEILPRIN, Ph.D.

Professorial Lecturer in Engineering Administration

ROBERT ALEXANDER HEMMES, M.S.

Assistant Professor of Civil Engineering

JOHN KAYE, M.S. IN M.E.

Associate Professor of Engineering Administration

- IRVING KOROBKIN, B.A.E., M.S. IN M.E.
Lecturer in Mechanical Engineering
- ROBERT STEVEN LEDLEY, D.D.S., A.M.
Assistant Professor of Electrical Engineering
- THOMAS PHILLIP GEORGE LIVERMAN, Ph.D.
Associate Professor of Mathematics
- KERMIT MILTON LOVEWELL, B.S. IN E.E.
Lecturer in Electrical Engineering
- MARTIN ALEXANDER MASON, B.S. IN ENG., INC.-DE.
Professor of Civil Engineering; Dean of the School of Engineering
- PHILLIP WONN MAST, B.C.E.
Instructor in Civil Engineering
- NEELY FORSYTHE JONES MATTHEWS, B.S.E.
Instructor in Electrical Engineering
- FLORENCE MARIE MEARS, Ph.D.
Professor of Mathematics
- MELVIN RAYMOND MEYERSON, M.S. IN MET.E.
Professorial Lecturer in Civil Engineering
- JAMES RUSSELL MILES, SR., A.B., M.E.A.
Lecturer in Engineering Administration
- ROBERT EMERSON MOFFAT, B.S. IN C.E., M.C.E.
Lecturer in Civil Engineering
- MORROW HARRIS MOORE, JR., M.S. IN M.E.
Assistant Professor of Mechanical Engineering
- ROBERT HAMILTON MOORE, Ph.D.
Professor of English Composition
- PHILIP SIDNEY MORGAN, JR., B.S., M.S. IN M.E.
Assistant Professor of Mechanical Engineering
- ALBERT CHRISTIAN MURDAUGH, B.S., M.S. IN MET.E.
Assistant Professor of Mechanical Engineering
- CHARLES RUDOLPH NAESER, Ph.D.
Professor of Chemistry
- GEORGE PIDA, B.E.E.
Lecturer in Electrical Engineering
- ROBERT WILLIAM PINNES, M.M.E.
Lecturer in Mechanical Engineering
- FRANK JOSEPH POWELL, M.S.
Lecturer in Mechanical Engineering
- FRANK MILLER REYNOLDS, LL.M., B.S.
Professorial Lecturer in Engineering Administration

DERRILL CONWAY ROHLFS, B.E.E.
Associate in Electrical Engineering

LOUIS SAMUEL ROTOLO, B.S. in E.E.
Lecturer in Electrical Engineering

LLEWELLYN ADAM RUBIN, B.S. in E.E.
Instructor in Electrical Engineering

ROBERT IRVING SARBACHER, Sc.D., E.E.
Professorial Lecturer in Engineering Administration

PETER HANS SAWITZ, M.S. in E.E.
Lecturer in Electrical Engineering

DWIGHT EDWARD SHYTLE
Lecturer in Electrical Engineering

LEWIS SLACK, Ph.D.
Professor of Physics

WALDO EDWARD SMITH, B.E. in C.E., M.S. in C.E.
Professorial Lecturer in Civil Engineering

NATHANIEL STEWART, M.S., Ed.D.
Professorial Lecturer in Engineering Administration

HOWARD LIVINGSTON STIER, Ph.D.
Professorial Lecturer in Statistics (Engineering Administration Program)

ALEXANDER WALTER SUMOSKI, Ph.D.
Associate Professorial Lecturer in Electrical Engineering

SANFORD THOMPSON, Ph.D.
Professorial Lecturer in Mechanical Engineering

BOONE DOUDY TILLET, LL.B., M.S., Sc.D.
Associate Professor of Engineering Administration

JACK EDWARD WALTERS, M.S. in M.E., Ph.D.
Professor of Engineering Administration; Director, Engineering Administration Program

CARL HUGO WALTHER, B.E., M.C.E.
Professor of Civil Engineering; Assistant Dean in the School of Engineering

GEORGE CALVIN WEAVER, M.S.
Associate Professor of Mechanical Engineering

DAVID GOVER WHITE, B.Chem.Eng., Ph.D.
Associate Professor of Chemistry

ROBERT JAMES WILSON, A.M., Ed.D.
Professorial Lecturer in Engineering Administration

THE ADVISORY COUNCIL

ALLEN VARLEY ASTIN, Ph.D., Sc.D.
Director of the National Bureau of Standards

LYMAN JAMES BRIGGS, Ph.D., Sc.D., LL.D.
Trustee of the University

HUGH LATIMER DRYDEN, Ph.D., Sc.D., D.Eng.
Vice-President of Research of the National Advisory Committee for Aeronautics

RALPH LEON GOETZENBERGER, B.S., E.E.
Educational Consultant, Minneapolis-Honeywell Regulator Company

DANIEL CHARLES WALSER, B.S.
Consulting Engineer; former Chairman of the District of Columbia Board of Registration for Professional Engineers

The Council is made up of friends of the University who are intimately familiar with the educational needs of the professional community served by the School. The Council is advisory to the Dean of the School of Engineering; it serves the function of relating the School to the educational requirements of the engineering and scientific constituency served by the School.

ADMINISTRATIVE ASSISTANTS

Carolyn Fisk Hedin, *Secretary to the Dean*
Mary Dorothea Shields, *Secretary*
Mary Martha Condolon, *Clerk-Typist*
Myrna Lucia Tichenor, *Clerk-Typist*

COMMITTEES*

THE DEAN'S COUNCIL†

1960

Ernest Frank
Paul Arthur Crafton

1961

Charles Rudolph Naesser
Robert Aaron Hechtman

1962

Jack Edward Walters
Albert Christian Murdaugh

COMMITTEE ON ADMISSION AND ADVANCED STANDING

Nelson Thomas Grisamore
Carl Hugo Walther, *Chairman*
Philip Sidney Morgan, Jr.
Galip Mehmet Arkilic

COMMITTEE ON SCHOLARSHIP

Ernest Frank
George Calvin Weaver, *Chairman*
Robert Alexander Hemmes
David Gover White

*The Dean of the School and the Assistant Dean of the School of Engineering are members of all committees. Membership of committees listed here is for the academic year.
†Elected by the Faculty.

COMMITTEE ON GRADUATE STUDIES*

John Kaye, *Chairman*Ernest Frank
Paul Arthur Crafton
Galip Mehmet ArkilicThomas Phillip George Liverman
David Gover White
Keith Harder (Liaison Member)

Ronald J. Wylde (Liaison Member)

COMMITTEE ON RESEARCH

Ernest Frank, *Chairman*

Robert Steven Ledley

Robert Alexander Hemminger

Llewellyn Adam Rubin

GENERAL INFORMATION

INTRODUCTORY

The School of Engineering was organized October 1, 1884 as the Corcoran Scientific School of Columbian University and was situated in the University Building then at 15th and H Streets, NW. The school was named in honor of William W. Corcoran, Trustee and President of the Corporation from 1869 to 1888. Day and evening courses were offered in Literature, Science, and Technology and led to the degrees of Bachelor of Science, Civil Engineer, Mechanical Engineer, and Mining Engineer. The School was among the first to accept women for degree candidacy in engineering.

In 1902 the Corcoran Scientific School, the School of Graduate Studies, and the Columbian College were merged into a single Department of Arts and Sciences. Engineering degrees were made graduate in character and the student was required to hold a Bachelor of Science degree as a prerequisite to entrance. An indication of the developing character of the School is found in the entrance requirements which stated that "The candidate must give evidence he has completed a liberal undergraduate course—which was of such character as to fit him to pursue to advance the study of advanced engineering subjects".

Administrative changes led to The Washington College of Engineering being initiated in 1905 as one of the several semi-independent undergraduate colleges of the University, each with its own Board of Trustees. The College provided instruction leading to undergraduate degrees in engineering and architecture.

In 1909 the name of the College was changed to the College of Engineering and Mechanic Arts, and the curricula were revised to give the student a thorough understanding of the theory underlying engineering practice. Emphasis was placed on the development of a knowledge of

* Appointed by the Dean upon recommendation of the Faculty.

scientific principles upon which the student could build and by which he might solve new problems as they are met in practice.

The name of the school was changed again in 1914 to the College of Engineering and later to the School of Engineering. Architecture was dropped from the curriculum and degrees were limited to the field of engineering. However, the primary emphasis upon principles rather than technology which had characterized the School since 1902 was continued and has remained to this day as one of the important distinguishing features of the School.

The location of the School of Engineering in the nation's capital makes available a group of outstanding engineers and scientists as lecturers. It is traditional for the School to include these eminent professional specialists among the staff of instruction.

Since 1884 courses of instruction have been open to both men and women.

OBJECTIVE

The objective of the School of Engineering is to produce graduates who possess knowledge and understanding of the fundamental scientific principles in their fields of study; some skill in their application; and an attitude of responsibility toward society and the engineering profession.

ORIENTATION PROGRAM*

Students in the School of Engineering participate in the Orientation Program of the University, which is held during the week preceding registration for the fall semester. Events of the program include an advising period when members of the Faculty and academic advisers in the School of Engineering are available for personal interviews to assist students in planning their programs to best prepare them for ultimate goals; an Orientation Assembly, required of all new students; a Curriculum Assembly, for guidance in the selection of courses for the coming semester; placement tests for new students who do not have advanced standing in mathematics and English; qualifying examinations for students who wish to waive curriculum requirements or qualify for advanced standing; scheduled social events; and the opportunity to discuss with older students and with staff members concerned with student activities the extracurricular program of the University, so that a wise and rewarding selection may be made.

The placement tests are required and are scheduled during Orientation week for students entering the School of Engineering, and again during the week prior to the spring registration for students entering at that time, so that the results will be available to students and advisers

* See the calendar for dates of scheduled events.

before registration as a guide to class placement. Students shown by the results of placement tests to be inadequately prepared are advised to take remedial work before undertaking Engineering curriculum courses in areas of deficiency.

PROGRAMS OF STUDY

Programs of undergraduate study are offered leading to the degrees of Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, and Bachelor of Science in Engineering (with optional areas of concentration).

Graduate work is offered under the supervision of the Committee on Graduate Studies, leading to the degrees of Master of Science in Engineering and Master of Engineering Administration.

HOURS OF INSTRUCTION

Courses of instruction are scheduled in the morning, afternoon, and evening. By taking the evening and summer classes and extending the time of study beyond the customary four years, a student who is able to give only part of his time to college work may complete a regular course and obtain a degree.

VETERANS EDUCATION

The Office of Veterans Education of The George Washington University operates as a service bureau for veterans interested in studying at the University and acts in a liaison capacity between the University and the Veterans Administration. Eligible persons are advised to consult this Office concerning the educational program of the University and the procedure for securing Veterans Administration educational benefits before applying to the Veterans Administration for certification. The Veterans Administration is on Constitution Avenue at Twentieth Street NW., Washington 25, D.C.

PUBLIC LAW 634

(War Orphans' Educational Assistance Act)

A child of a person who died of a disease or injury incurred or aggravated while on active duty in the Armed Forces during World War I, World War II, or the Korean Conflict may be eligible for educational assistance under this Act, if certain age requirements are met. In the case of a child who has not reached the age of majority, his guardian must make application for him to the Veterans Administration. For further information concerning eligibility or benefits available under this Law, consult the University Office of Veterans Education or the Veterans Administration.

PUBLIC LAW 346
(World War II GI Bill)

The educational benefits for veterans under Public Law 346 terminated July 25, 1956, except as described below.

The Armed Forces Voluntary Recruitment Act of 1945 (Public Law 190) provided that persons enlisting or reenlisting in the Armed Forces between October 6, 1945, and October 5, 1946, may count the entire period of such enlistment or reenlistment as war service for purposes of GI Bill benefits. Such enlistees have four years from the date that enlistment ended to begin training and nine years from that separation date to complete training under this provision.

It is suggested that a veteran having any question regarding his eligibility consult the University Office of Veterans Education or the Veterans Administration.

PUBLIC LAW 550
(Korean GI Bill)

In order to be eligible for the benefits under this Law, a veteran must have been in service between June 27, 1950 and January 31, 1955, and must no longer be on active duty.

At least thirty days prior to registration the veteran wishing to attend under this Law should apply to the Veterans Administration for a Certificate for Education and Training, for presentation to the University Office of Veterans Education at the time of registration. A photostatic copy of his DD214 must accompany the original application for certification.

PUBLIC LAWS 16 AND 894
(Vocational Rehabilitation)

Disabled veterans desiring vocational rehabilitation under either Law should apply to the Veterans Administration for approval of their training objectives at least sixty days prior to registration.

SERVICE SCHOOL CREDITS

A limited amount of credit earned in service schools since 1941 may be considered for assignment to qualified degree candidates in accordance with faculty regulations of the Junior College, Columbian College, the School of Engineering, and the School of Government. To be considered for such credit, veterans should submit to the Director of Admissions photostatic copies of their service school records, indicating courses successfully completed with sufficient identification of the course to locate it in the Guide to Evaluation of Educational Experience in the Armed Forces.

AIR FORCE RESERVE OFFICERS' TRAINING CORPS

The Air Force Reserve Officers' Training Corps (Air Force ROTC) unit was established at the University in 1951 under authority of Section 40-47C, National Defense Act of June 3, 1916, as amended. Air Force personnel, approved by the President of the University, are assigned by the Department of the Air Force to supervise and conduct the Air Force ROTC program.

The mission of the Air Force ROTC program is to select and prepare students through a permanent program of instruction to serve as commissioned officers in the Regular and Reserve components of the United States Air Force. Classroom instruction and leadership training are provided to develop in the student the knowledge and the attributes of character, personality, and leadership required of officers in the United States Air Force.

ELIGIBILITY REQUIREMENTS

Enrollment in the Division of Air Science is open to all men students and a limited number of women students, who are at least 14 years of age, physically fit, of good character, and candidates for Bachelor's degrees. Men and women enrolled in Air Force ROTC are designated Cadets and Cadettes, respectively. Cadets who successfully complete the basic course may be selected to enter the advanced course. Cadets in the advanced course receive from the Government a subsistence allowance of approximately \$500, which is exempt from income tax. During the period of summer training the advanced cadet receives, in addition, \$75 a month, plus food, lodging, and travel expense. Uniforms, textbooks, and training materials are provided for all Air Science courses at no expense to the cadet.

A cadet enrolling in the basic course is required to successfully complete the two-year course as a prerequisite to graduation from the University. A cadet applying for enrollment in the advanced course must, if selected, sign a contract to complete the course as a prerequisite to graduation; attend a four-week summer training unit; and fulfill the obligations conjunctive with military service delay specified below.

In addition, a cadet who applies and is accepted for enrollment in the advanced course in the category leading to pilot training may be required to pursue a 35 hour course of flying instruction during his senior year. This flying instruction is provided by a Civil Aeronautics Administration approved school at government expense and leads to qualification for a private pilot's certificate.

A limited number of junior women may enroll in the Air Force ROTC advanced course and, upon successful completion thereof and completion

of requirements for a Bachelor's degree, may be commissioned as second lieutenants in the United States Air Force Reserve.

MILITARY SERVICE DELAY

Deferment from induction under the Selective Service Act of 1951 may be granted to selected cadets within authorized quotas. Normally, a cadet is not considered for draft deferment until he has completed one semester's work in the University, with a quality-point index of at least 2.00. A cadet's deferment is subject to withdrawal if his quality-point index falls below 2.00.

HEALTH ADMINISTRATION

The University maintains a health service that is primarily diagnostic in its intent. For medical emergencies and health consultations there is, on the Campus, a Student Health Clinic open from 9:00 A.M. to 5:00 P.M., with physician and nurse in attendance. There is also a rest room for women, with a graduate nurse in charge.

Medical privileges include: (1) the physical examination of every student entering from secondary school;* (2) three visits by the University physician or surgeon, office or residence (District of Columbia), in any one illness, exclusive of a specialist, surgical operation, laboratory, or X-ray examination; (3) hospitalization, including board and nursing in the University Hospital for not more than one week during any twelve-month period—the necessity to be determined by the Director of Health Administration. All additional hospital charges for operating room, laboratory, anesthetics, X-ray, medications, or any other special service must be paid by the student. The duration of hospitalization period (maximum, one week) is also to be determined by the Director of Health Administration.

This medical benefit does not apply to illness or disability incurred previous to the University term or prior to payment of tuition fees.

The student is allowed, if he so desires, to engage physicians and nurses of his own choice, but when he does so he will be responsible for the fees charged.

Rules: (1) The Director of Health Administration is empowered to limit or deny the medical benefits where, in his discretion, a student has, by his misconduct or breach of the rules of the University, made himself ineligible; (2) the Director of Health Administration has authority to determine the necessity and length of hospitalization; (3) a student who has severed his connection with the University is ineligible for medical benefits; (4) a student intending to train for an athletic team is required to pass a thorough examination at the beginning of each semester; (5) the

* A charge of \$2 for a special physical examination is made by the University if a student fails to appear for a physical examination during the period set for the purpose.

above regulations apply also during the summer term of the University.

The University is not responsible for injuries received in intercollegiate or intramural games, or in any of the activities of the departments of physical education.

LIVING ACCOMMODATIONS

The University maintains four residence halls. Meals are served at the Student Union.

Admission to the University does not include a room reservation. A separate application for a room should be made well in advance (for the fall semester by May first, for the spring semester by January first). Forms for application, together with detailed information, may be obtained from the Director of Activities for Women or the Director of Activities for Men.

Information concerning private rooming and boarding facilities near the University, for women students twenty-one years of age or older and for men students, may be obtained at the Housing Office, Lisner Auditorium. The reservation of rooms in private houses must be made by students.

All girls (except freshmen) under the age of twenty-one who are enrolled for twelve or more semester hours of academic work at the University and who are not living with their parents or relatives may live outside the dormitories only with the permission and approval of the Director of Activities for Women, upon receipt of written requests from parents. In no case will permission be granted for such girls to be domiciled outside the dormitories except with persons approved by the Director of Activities for Women.

Freshman girls may be domiciled outside the dormitory only with their parents or with immediate relatives with the written approval of their parents.

Women Students—The Hattie M. Strong Hall provides single rooms at \$40 a month and double rooms at \$35 a month a person.

The Dolly Madison Hall provides double rooms at \$35 a month a person.

Men Students—Welling Hall provides double rooms at \$30 a month a person.

The John Quincy Adams Hall provides 69 double rooms each with study alcove and bath. Rooms rent at \$37.50 a month a person.

RELIGIOUS LIFE

The University recognizes the contribution that religion can make to the education of its students by encouraging them to participate in denominational clubs of their own choice. National Catholic, Jewish, and Protestant bodies sponsor these religious organizations, which act as

links between the University and the local churches. The Director of the University Chapel and the advisers to the various denominational organizations are available throughout the year for consultation on personal problems.

UNIVERSITY CHAPEL

The University Chapel is maintained as a nonsectarian expression of the faith of the University in the contribution that religion can make to the education of its students. Twenty-minute services are held Wednesday of each week at 12:10 P.M. Representative clergymen of Washington are guest speakers at these nondenominational services.

THE PLACEMENT OFFICE

The Placement Office, 2114 G Street NW., provides assistance to students and alumni seeking full-time or part-time, temporary or permanent employment. The Office maintains a registry of positions available in many fields, both locally and nationally, and refers qualified applicants for consideration.

Students and alumni interested in placement are asked to register in person at the Office and to select from written descriptions of current openings positions for which they wish referral. Those interested in planning careers are invited to study the information on career fields and the brochures of business and industrial organizations, government agencies, etc., which are on display in advance of campus visits by recruiting officers. The services of the Counseling Center are available to students and alumni wishing career guidance.

The Placement Office is open from 9:00 A.M. to 5:00 P.M., Monday through Friday. Interviews for referral are held from 9:00 A.M. to 1:00 P.M.

THE TESTING AND COUNSELING CENTER

The Testing and Counseling Center, 718 Twenty-first Street NW., offers services which are available to students enrolled in the University, to high school students, and to adults of the community.

The services are designed to: assist individuals in the evaluation of their educational and vocational potentialities and objectives; diagnose academic difficulties; provide educational and vocational literature and information; and refer individuals to qualified agencies for assistance with problems not handled by the Center.

The Center provides special testing services including: diagnostic tests prescribed by the School of Engineering, admissions tests for the University and for other educational institutions, and tests for business and industry.

Fees.—Except for specialized testing, the fee covers testing and counseling based on the results of the tests. For students currently enrolled

in the University, the fee is \$7.50; for former students and community clients under twenty-one years of age, \$30; for community clients over twenty-one, \$45. Fees for specialized testing are dependent upon the services involved. All fees are payable at the Office of the Center.

STUDENT UNION

The Student Union, 2125 G Street NW., is the center for student life. From the cafeteria on the first floor to the reading room on the fourth floor, it is well planned to meet the students' need for meals, study, recreation, and activities. In addition to the recreation lounge and social lounge the Student Union provides office space for the Student Council and for the other major student organizations.

The Student Activities Office, also in the Student Union, has available information concerning the student organizations and campus events.

DAVIS-HODGKINS HOUSE

The Davis-Hodgkins House, 731 Twenty-second Street NW., is the engineering student center, providing lounges, reading rooms, and student organization offices. The House provides convenient, comfortable facilities for the exchange of ideas and good fellowship among student engineers.

INTERNATIONAL HOUSE

The International House, 2116 G Street NW., is the social center for students from foreign countries. A series of teas, dances, and other forms of entertainment, and the use of club rooms and lounge enable students to become acquainted and feel at home in the University.

The International Students Society welcomes as members students from other lands as well as North American students.

The Adviser to Students from Foreign Countries, whose office is in International House, is available for advice and guidance.

STUDENT ACTIVITIES

DIRECTORS OF STUDENT ACTIVITIES

The University maintains the offices of the Director of Activities for Men and the Director of Activities for Women, for the guidance of students in all nonacademic phases of student life, such as student activities, social life, and housing. The directors are available for individual counseling concerning personal adjustment to university life.

STUDENT GOVERNMENT

Student Council.—The University believes in encouraging the development of the sense of civic responsibility in its students by delegating to them such authority in student activities as is consistent with estab-

lished policy and regulations. To this end, the organization of the University includes the Student Council, which, under the guidance of the Directors of Student Activities, is responsible for the conduct of all student activities. The Student Council is elected annually by the student body.

Committee on Student Life.—The Committee on Student Life is the judicial branch of the student government. It is composed of not more than seven members of the faculty, two of whom are the Director of Activities for Men and the Director of Activities for Women, appointed by the President of the University, and the following members: President of Student Council, an Editor of the *Hatchet*, President of Mortar Board, President of Omicron Delta Kappa, President of the Interfraternity Council, and President of Panhellenic Council. This Committee has the power to review the acts of all student organizations, including the Student Council, and set aside acts that are contrary to established policy and regulations of the University or the Committee.

Approval of Student Organizations.—This Committee is granted authority to approve or disapprove the establishment of any proposed organization on campus. No student club or society (except social fraternities, sororities, scholastic honor societies, religious or professional clubs or societies) organized as a branch or affiliate of a non-George Washington University organization will be recognized by the Committee on Student Life.

ELIGIBILITY FOR STUDENT ACTIVITIES

Any student registered in The George Washington University is eligible to participate in nonathletic student activities of the University; however, a student having a scholastic average of less than 2.00 is not eligible to be:

1. A member of the Band, Dance Production groups, Enosinian Debate Society, Glee Club, Cheerleaders, Student Council, Religious Council, Panhellenic Council, Interfraternity Council, Engineers' Council, Student Life Committee, or any publications staff
2. An officer, permanent committee chairman, or member of the executive board of any activity.

The rules and policies of the Southern Conference govern participation in intercollegiate athletics.

THE ENGINEERS' COUNCIL

The Engineers' Council is the student governing body for the School of Engineering, composed of two elected representatives from each year class and from the graduate student body, one representative from each student organization in the School, the Business Manager of the *Mechelectiv*, and the House Manager of the Davis-Hodgkins House. The

purpose of the Council is to provide liaison between the student body of the School of Engineering and the Faculty, Administration, and Student Government of the University in all matters affecting the general interests and welfare of the student body, the School of Engineering, or the University. The Council is maintained financially by the Engineers' Council Fee paid by each student in the School of Engineering, and sponsors the engineer student magazine, *Mechelecie*; the Annual Engineers' Mixer, Engineers' Banquet and Ball, and the Annual Christmas Tree Ceremony in the University Yard. Council meetings are open to all students in the School of Engineering.

The Council acts as the directing body for *Mechelecie*, the engineers' student magazine. The magazine is published six times a year and is sent free to all engineering students. It includes campus and alumni news, a calendar of events, news of the student organizations, and articles on engineering by students and faculty members. The magazine is published by a student Board of Editors and a volunteer student staff.

The control and administration of all student activities are outlined in a separate bulletin.

SPORTS ACTIVITIES

The University is a member of the Southern Conference and the National Collegiate Athletic Association. Its teams participate in intercollegiate contests in football, basketball, baseball, tennis, golf, rifle, sailing, and crew.

The University maintains a complete program of intramural sports for both men and women. The men's program is conducted by the Intramural Council. The Women's Athletic Association and Interscholarity Athletic Board cooperate with the departments of Physical Education in conducting the women's intramural and informal extra-mural sports program in tennis, hockey, basketball, rifle, swimming, golf, bowling, and badminton.

Other sports activities include the Fencing Club, Sailing Association, and Rowing Club.

ARTS

The University offers an opportunity for interested students to participate in dance, drama, forensics, and music through the following organizations: Dance Production Groups I, II, III; Enosinian Debate Society; University Dramatic Production Group; and University Glee Club. Each of these groups presents programs during the academic year.

With the cooperation of the Curator of Art, an annual student art exhibit is presented.

ANNUAL EVENTS

Colonial Program.—The Student Council sponsors a series of ten cultural programs to which all students are invited.

Recreation Program.—The Student Council and the Dance Production Groups arrange dances—square, folk, and social—at frequent intervals for all students.

Engineers' Mixers.—At the beginning of each semester the Engineers' Council sponsors an evening program of orientation, good fellowship, and entertainment to introduce new students.

Homecoming.—Scheduled about the middle of the Fall Semester, Homecoming is the primary festive period of the school year. It includes the annual Pep Rally and Variety Show, the homecoming football game, and the homecoming dance.

Christmas Tree Lighting.—Shortly before Christmas vacation, a tree, given and decorated by the School of Engineering, is lighted at a carol ceremony in the University Yard.

The Winter Weekend.—In true Mardi Gras spirit, this function includes a jazz concert and a masquerade ball.

The Activities Fair.—Early in the Spring Semester, all campus activities entertain the freshmen in the Lower Lounge of Lisner Auditorium, with exhibits and demonstrations. Here new students meet older students with similar interests.

Engineers' Banquet.—In the spring the Engineers' Council sponsors the Engineers' Banquet and Ball, a social event for students and alumni, featuring recognition of student achievements during the year.

Career Conference.—Under the sponsorship of the Student Council, guest speakers from many professions explore annually with students the potentialities of vocations available on graduation.

May Day.—This is the traditional time for the award of honors in student activities. Mortar Board and Omicron Delta Kappa announce and present their new members.

The Colonial Cruise.—An afternoon and evening cruise on the Potomac in the late spring. Students, alumni, and faculty picnic, dance, and engage in games and athletic contests.

STUDENT ORGANIZATIONS

HONOR SOCIETIES

Sigma Xi.—A national scientific honor society, the purpose of which is to encourage original investigation in science pure and applied. Outstanding graduate students in the sciences are eligible for full membership, and undergraduates who have shown marked ability in research may be elected to associate membership.

Omicron Delta Kappa.—A national fraternity emphasizing leadership in extracurricular activities.

Order of Scarlet.—A service honorary society for sophomore and junior men.

Phi Eta Sigma.—A national fraternity, established to encourage and reward high scholarship and attainment, membership in which is limited to those freshman men who attain a scholastic average of at least 3.50.

Sigma Tau.—A national engineering fraternity, the purpose of which is to recognize scholarship and professional attainment.

PROFESSIONAL ORGANIZATIONS

American Society of Civil Engineers (Student Chapter).—Membership open to students who are candidates for a civil engineering degree or the degree of Bachelor of Science in Engineering.

American Institute of Electrical Engineers—Institute of Radio Engineers (Student Chapter).—Membership open to candidates for an electrical engineering degree.

American Society of Mechanical Engineers (Student Chapter).—Membership open to candidates for the degree of Bachelor of Mechanical Engineering.

Theta Tau (Gamma Beta Chapter).—A national professional (engineering) fraternity. Membership by invitation to outstanding students who have completed successfully at least the freshman year in the School of Engineering.

SOCIAL FRATERNITIES

Sigma Chi, Kappa Sigma, Phi Sigma Kappa, Sigma Alpha Epsilon, Sigma Phi Epsilon, Phi Alpha, Sigma Nu, Acacia, Tau Kappa Epsilon, Pi Kappa Alpha, Tau Epsilon Phi, Alpha Epsilon Pi, Delta Tau Delta, Kappa Alpha.

SOCIAL SORORITIES

Pi Beta Phi, Chi Omega, Sigma Kappa, Alpha Delta Pi, Delta Zeta, Kappa Delta, Phi Sigma Sigma, Zeta Tau Alpha, Kappa Kappa Gamma, Delta Gamma, Kappa Alpha Theta, Deuterons.

RELIGIOUS ORGANIZATIONS

Baptist Student Union, B'nai B'rith Hillel Foundation, Canterbury Club, Christian Science Organization, Lutheran Student Association, Newman Club, Religious Council, Student Christian Fellowship, Wesley Club, Westminster Foundation.

STUDENT PUBLICATIONS

Amicus Curiae (Law School publication). *The Cherry Tree* (the annual), *The University Hatchet* (weekly newspaper), *The George Washington Law Review*, *Mecheleci* (engineers' publication), *The Percolator* (pharmaceutical publication).

OTHER ORGANIZATIONS

Adams Hall Council, Alpha Theta Nu (scholarship winners), Big Sisters, Cheerleaders, Colonial Boosters, Current Events Club, Flying Sponsors, Interfraternity Council, Interfraternity Pledge Council, Inter-law Fraternity Council, International Relations Club, International Students' Society, Junior Panhellenic Association, Madison Hall Council, Old Men, Senior Panhellenic Association, Strong Hall Council, Student Council, Student Legal Aid Society, University Band, Wandering Greeks, Writers' Club.

ADMISSION

The School of Engineering accepts men and women.

Students may enter at the beginning of the fall semester, the spring semester, or the Summer Sessions.

APPLICATION FOR ADMISSION

An applicant for admission must obtain from the Office of the Director of Admissions of the University an application blank which he must fill out completely and return with the application fee of \$10. A recent photograph, with signature, of the applicant must be attached to the blank.

Applications should be filed not later than July 1 for the fall semester, January 1 for the spring semester, and May 1 for the Summer Sessions.

An applicant from a secondary school must send the high school record form provided by the University to his high school principal with the request that the principal fill out the form and mail it directly to the Office of the Director of Admissions.

The applicant for undergraduate study is responsible for requesting the College Entrance Examination Board to send to the Office of the Director of Admissions the scores of all College Entrance Examination Board Scholastic Aptitude tests and Achievement tests taken.

An applicant who has previously attended an institution of higher learning must request the registrar of that institution to mail directly to the Office of the Director of Admissions a transcript of his record. If he has attended more than one such institution he must request the registrar of each institution to send to the Office of the Director of Admis-

sions a transcript of his record, *even though credits were not earned*, together with an honorable dismissal from the institution last attended.

The Graduate Record Examination administered by the Educational Testing Service, 20 Nassau Street, Princeton, New Jersey, is accepted as supplemental evidence of the applicant's attainment, and the appropriate report should accompany the application for admission whenever available.

COLLEGE ENTRANCE BOARD EXAMINATIONS

College Entrance Board examinations are given at a large number of examination centers throughout the United States, including Washington, D. C., on the following dates:

Scholastic Aptitude Test.—January 10, February 14, March 14, May 16, and August 12, 1959.

Achievement Tests.—March 14, May 16, and August 12, 1959.

Arrangement for examinations should be made with the College Entrance Examination Board, 20 Nassau Street, Princeton, New Jersey, not less than one month before the date of the examination.

ENTRANCE REQUIREMENTS *

The applicant for undergraduate or graduate work must be of good character and must have had academic background appropriate for the program of studies contemplated.

FOR UNDERGRADUATE STUDY

For the Degrees of Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, Bachelor of Science in Engineering.—An acceptable certificate of graduation from an accredited secondary school, supplemented by a report of scores in the College Entrance Examination Board Scholastic Aptitude Test. In special circumstances, other appropriate tests may be prescribed by the Committee on Admissions and Advanced Standing.

To be considered for admission the certificate must report graduation with a minimum of fifteen "units"† from an accredited secondary school and the recommendation from the principal of the secondary school that the applicant is adequately prepared to undertake college work, and that the student ranks not lower than the fourth fifth of his class. If the school is not listed by the regional accrediting association, but has been accredited by the state accrediting agency, the student must rank in the upper three fifths of his class.

* The University reserves the right to refuse admission to any student who has a previous academic record of such grade as to cause doubt of his ability to pursue college work successfully, or who, for any other reason, would not be a desirable student.

† A unit represents a year's study in a secondary school subject, including in the average not less than 120 sixty-minute periods of prepared classroom work.

Nine and one-half of the fifteen units required for entrance must be distributed as follows: three in English, two in algebra, one in plane geometry, one-half in plane trigonometry, one in physics or chemistry, and two in one foreign language or history. A graduate of an approved high school who does not offer for admission the particular subjects required for the engineering curriculum, but who does present not less than fifteen acceptable units, may be admitted on condition, if such deficiency in the distribution of units does not exceed two units.

Advanced standing may be granted for work successfully completed at accredited institutions of higher learning. Credit will be assigned by the School of Engineering to the extent that the work taken at previous institutions meets the requirements for the degree sought at this University, and subject to the general University regulations concerning satisfactory subsequent work.

FOR GRADUATE STUDY

For regulations concerning admission to graduate study, see page 56.

For Degree Candidacy

For regulations concerning admission to degree candidacy, see page 56.

REGISTRATION

Before a student may be admitted to registration he must have satisfied the Office of the Director of Admissions that he is qualified to enter the University.

A student who has previously matriculated in the University, but who has not been in attendance during the semester prior to registration, should file an application for readmission in advance of registration.

Registration is for the semester unless otherwise indicated on the registration paper. No registration is accepted for less than a semester or one summer session.

A student may not register concurrently in the School of Engineering and in another institution or another division of The George Washington University without the permission of the Dean. Allowance of credit for work done concurrently will be at the discretion of the Committee on Admission and Advanced Standing.

Registration in the University entitles each student to the following University privileges (1) the issuance of one certified transcript of record, if and when desired; (2) the services of the Placement Office; (3) the use of University library facilities, except as otherwise designated; (4) gymnasium privileges; (5) admission to all athletic contests, unless otherwise specified; (6) subscription to the *University Hatchet*.

the student newspaper; (7) admission to University debates; (8) medical attention and hospital services as described under Health Administration, pages 23-24. These privileges, with the exception of the issuance of transcripts, terminate, and a student is no longer in residence when he withdraws or is dismissed from the University.

FEES AND FINANCIAL REGULATIONS

Application fee, charged each applicant for admission as a degree candidate, nonrefundable	\$10.00
Application fee, charged each applicant for admission as a non-degree candidate, nonrefundable	5.00
Tuition Fees:	
For each semester hour for which the student registers (except for courses in Departments of Instruction in the School of Engineering, for courses in the College of General Studies Off-Campus Division, and for work toward a Master's degree in Engineering)	20.00
For each semester hour for which the student registers for courses in Departments of Instruction in the School of Engineering	20.00
For the degree of Master of Engineering Administration	
For work leading to and including the Comprehensive Examination *	700.00
For the degree of Master of Science in Engineering	
For work leading to and including the Comprehensive Examination *	800.00
Graduation fee	25.00
Admission Tests (when required)	7.00-10.00
Graduate Record Examination fee (to cover two examinations), charged each candidate for a Bachelor's degree at the time of registration for the final semester	5.00
Late registration fee, charged each student who fails to register within the designated period	5.00
Change fee, charged each student for each change in program involving one or more than one course	5.00
Withdrawal fee, charged each student who preregisters and withdraws prior to the regular registration	5.00
Service fee, charged each student for late payment of tuition	2.00
Reinstatement fee, charged each student who is reinstated after suspension for delinquency in fees	5.00
Residence fee,† charged each student wishing to maintain "in residence" status during any semester of absence from the University or after completion of tuition requirements	22.00
For special physical examination	2.00
Engineers' Council fee, charged each student in the School of Engineering for each semester or any part thereof except the summer term	1.00
For each examination to qualify for advanced standing and for each special examination	1.00
Laboratory checkout fee, charged each student in chemistry courses who fails to check out of the laboratory by the time set by the instructor	1.00

* When a limited schedule is named which extends the time of completion of the program of study to more than one year, a proportionate part of the charge may be used by the Treasurer.
 † Candidates for the Master's degrees who have paid in full the fee for work leading to and including the Comprehensive Examination but whose Comprehensive Examinations have not been completed will be granted one semester without payment of residence fee.

Transcript fee, charged for each transcript of record after the first. 1.00
Additional Course Fees

In certain courses additional fees, such as laboratory and material fees, are charged as indicated in the course descriptions. These fees are charged by the semester and, unless otherwise indicated, may be defrayed in three payments when the tuition is paid in this manner. Breakage of apparatus is charged against the individual student. When breakage is in excess of the normal amount provided for in the laboratory fee the individual student will be required to pay such additional charges as are determined by the department concerned.

PAYMENT OF FEES

All fees are payable at the Office of the Cashier, 725 Twenty-first Street NW. No student is permitted to complete registration or to attend classes until all fees are paid. Fees for each semester are due and payable in advance at the time of registration.

In exceptional cases, subject to the approval of the Treasurer, the student may sign a contract for semester charges, except for fees payable in advance, permitting payments as follows:

Fall Semester.—One third at the time of registration; one third on November 2; one third on December 1.

Spring Semester.—One third at the time of registration; one third on March 1; one third on April 1.

A student who fails to meet payments when due, but who pays his fees from the fourth to the fifteenth, inclusive, of the month in which payment is due, is charged a service fee of \$2. A student who fails to meet payments by the fifteenth of the month in which payment is due will be automatically suspended and may not attend classes until he has been officially reinstated and has paid all accrued fees and a reinstatement fee of \$5.

A student suspended for failure to meet payments when due may not be reinstated for the semester after two weeks from the date of suspension. Applications for reinstatement are to be made to the Office of the Cashier.

An auditor pays all fees chargeable to the student registered for credit except the late-registration fee.

WITHDRAWALS AND REFUNDS

Application for withdrawal from the University or for change in class schedule must be made in person or in writing to the Dean. Notification to an instructor is not an acceptable notice.

For regulations governing students in the School of Engineering concerning withdrawal without academic penalty, see page 46.

A student may not withdraw from either the basic course (2 years) or the advanced course (2 years) of the Air Force ROTC without the approval of the President of the University.

In authorized withdrawals and changes in schedules, financial adjustments will be made as follows:

Fall Semester.—Withdrawal dated on or before October 30, cancellation of two-thirds of tuition charges; withdrawal dated on or before November 30, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to November 30.

Spring Semester.—Withdrawal dated on or before February 29, cancellation of two-thirds of tuition charges; withdrawal dated on or before March 31, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to March 31.

In no case will a refund be made of the first third of the total tuition charges unless the registration is in advance and is cancelled before the regular registration day. In this case a withdrawal fee of \$5 is charged and tuition fees refunded. In no case will tuition be reduced or refunded because of nonattendance upon classes.

Payment applies only to the semester for which a registration charge is incurred and in no case will this payment be credited to another semester.

Any student in chemistry who fails to check out of the laboratory on or before the date set by the instructor, unless excused by the instructor, will be charged a checkout fee in the amount of \$3. A student who drops a course before the end of the semester must check out of the laboratory at the next regular laboratory period.

Any student enrolled in the Air Force ROTC who fails to turn in uniforms, equipment, and textbooks on separation from the Corps will be charged the value of the missing items.

Authorization to withdraw and certification for work done will not be given a student who has not a clear financial record.

SCHOLARSHIPS, PRIZES, FINANCIAL AID

SCHOLARSHIPS

Scholarships are awarded for the academic year unless otherwise specified and are credited in equal parts for each semester. Each holder must carry the full prescribed schedule during the period for which the scholarship is awarded. Except in the case of the School of Engineering Scholarships, the General Motors College Scholarship, the Eugene and Agnes E. Meyer Scholarships, the National League of Masonic Clubs Scholarship, the Student Activities Scholarships, and the Texaco Scholarship, the applicants must have established an academic record in courses at this institution, and should apply on prescribed forms which must be filed in the Office of the Chairman of the Committee on Scholarships not later than April 1 preceding the academic year for which the scholarship is to

be awarded. Further information may be obtained from the Chairman of the Committee on Scholarships.

Association of Federal Communications Consulting Engineers Scholarship.—This scholarship, in the amount of \$520, established in 1958 by the Association of Federal Communications Consulting Engineers (AFCCE), is available to a student of good character, promise, and leadership pursuing a course of study leading to a Bachelor of Electrical Engineering degree and intending to major in communications.

Emma K. Carr Scholarships.—Six scholarships in the amount of \$400 each and ten of \$100 each, established in 1932 by Mrs. Emma K. Carr, are available to "young men (of the white race) for undergraduate or postgraduate work, considering character, capacity, and need".

Henry Harding Carter Scholarship.—This scholarship, in the amount of \$500, established in 1896 by Mrs. Maria M. Carter in memory of her husband, Henry Harding Carter, is available to a deserving student who is preparing for the civil-engineering profession.

Maria M. Carter Scholarship.—This scholarship, in the amount of \$100, established in 1871 by Mrs. Maria M. Carter, is available to a young man.

Isaac Davis Scholarship.—This scholarship, in the amount of \$80, was established in 1869 by the Honorable Isaac Davis of Massachusetts. Nominations for the scholarship may be made "by the founder or his eldest lineal descendant". In case no such nomination is made, the scholarship is to be awarded by the University.

School of Engineering Scholarships.—Four scholarships are available each year in the School of Engineering to graduates of accredited secondary schools. The holders of these scholarships must carry a full program in the School of Engineering.

Each scholarship is a full-tuition scholarship but does not cover special fees. Each scholarship is for four academic years (summer work is not to be included), provided the holder thereof meets all academic and other standards of the University.

To retain a School of Engineering scholarship, an average of *B* and a satisfactory standard of deportment must be maintained. In case a student marries after the award is made, the scholarship is forfeited. If for any reason a holder of a School of Engineering scholarship resigns or is dropped from said scholarship, the scholarship remains unfilled.

Henry Parsons Erwin Scholarship.—This scholarship, in the amount of \$300, established in 1955 by Mrs. Helen B. Erwin as a memorial to her husband, Henry Parsons Erwin, a former Trustee of the University, is available for a student in Engineering.

General Motors College Scholarship.—This scholarship, established in 1955 by General Motors Corporation, is available for an incoming freshman student who is a citizen of the United States and demonstrates out-

standing talent, high personal qualifications, and financial need. The amount of the award has been made flexible and will range from an honorary award of \$200, up to an award of \$2,000 per year, depending upon the demonstrated need of the individual. It is renewable for the four years of undergraduate work, provided the student continues to meet the high standards established for the holder of this award.

Hazelton Scholarship.—This scholarship, in the amount of \$350, established in 1950 by the bequest of Lillie S. Hazelton, is awarded annually "for the use and assistance of needy and worthy students".

Eugene and Agnes E. Meyer Scholarships.—A scholarship fund, in the amount of \$3,500, established in 1952 by the Eugene and Agnes E. Meyer Foundation, is available annually "to assist promising students or applicants in meeting the costs of furthering their education, with preferential consideration to children of persons who are employed in public service, including service in the armed forces or the judiciary."

David Spencer Scholarship.—This scholarship of \$175, established in 1918 by Miss Louisa J. Spencer, is available under certain restrictions.

Texaco Scholarship.—This scholarship, established in 1956 by the Texas Company, covers tuition, fees, and textbooks, and is awarded annually to a young man entering the freshman class in a curriculum which will prepare him for a career in the petroleum industry. It is renewable for the four years of undergraduate work provided the student maintains high standards of scholarship and deportment.

The Zonta Club of Washington, D. C., Scholarship.—This scholarship, in the amount of \$300, offered by the Zonta Club of Washington, D. C., is available to a woman who is a junior, senior, or graduate student with special interest in a professional or business career.

THE COLUMBIAN WOMEN SCHOLARSHIP FUNDS

The Columbian Women Scholarships are awarded by the Scholarship Committee of the Columbian Women. Applications for these scholarships should be addressed to the Chairman of the Scholarship Committee, the Columbian Women, The George Washington University, Washington 6, D.C., not later than May 15 preceding the academic year for which the scholarship is to be awarded, or, in the case of award for the spring semester, not later than January 1.

PRIZES

Alpha Chi Sigma Prizes.—Alpha Pi Chapter of Alpha Chi Sigma Fraternity offers annually the following prizes:

A "Handbook on Chemistry and Physics" is awarded to each of the three students who carry at least eighteen semester hours during the freshman year and attain the highest averages in freshman chemistry.

The name and year of graduation of the student who has attained the highest quality-point index in courses in chemistry will be inscribed on a bronze plaque. The winner must have had at least sixteen hours of chemistry including the final semester at The George Washington University.

Martin Mahler Prize in Materials Testing.—This prize established in 1953 by Martin Mahler consists of a one-year membership in the American Society for Testing Materials and is awarded to the upper division or graduate student in engineering who submits the best reports on tests in the Materials Laboratories course with preference given to prestressed concrete tests.

Omicron Delta Kappa Prize.—Alpha Delta Circle of Omicron Delta Kappa Fraternity offers annually a plaque to be awarded to "that member of the senior class who throughout his course has done the most constructive work in the furtherance and upbuilding of the University student activities".

Phi Eta Sigma Prize.—The George Washington University Chapter of Phi Eta Sigma offers annually to the male student attaining the highest scholastic average in his first full semester of work, a choice book selected from the field of the recipient's major interest. The winner's name will be engraved on a plaque in the office of the Dean of the Junior College.

Ruggles Prize.—The Ruggles Prize of \$35, established by Professor William Ruggles in 1859, is awarded annually to a candidate for a baccalaureate degree for excellence in mathematics.

Sigma Kappa Prize.—Zeta Chapter of Sigma Kappa Sorority offers an annual prize of \$10 to the student with the highest grade in the final examination in General Chemistry.

Sigma Tau Prize.—Xi Chapter of Sigma Tau Fraternity offers annually a medal to be awarded to that member of the freshman class in the School of Engineering who maintains the highest scholastic standing in the work of the entire year.

James MacBride Sterrett, Jr., Prize.—This prize, established in 1911 by Professor James MacBride Sterrett in memory of his son, consists of the *American Institute of Physics Handbook* awarded annually to that student who obtains the highest average in Physics 14, 15, and 16.

Theta Tau Activities Plaque.—Gamma Beta Chapter of Theta Tau Fraternity offers annually a plaque to be awarded to that member of the senior class who has the most outstanding record in activities in the School of Engineering during the entire period of his attendance.

Alexander Wilbourne Weddell Prize.—This prize of \$350, established in 1923 by Mrs. Virginia Chase Weddell, is awarded annually to a candidate for a degree who writes the best essay on the subject of "the promotion of peace among the nations of the world". The prize essays

shall become the property of the University and shall not be printed or published without the written consent of the University. The University reserves the right to withhold the award if no essay attaining the required degree of excellence is submitted.

MILITARY AWARDS

Society of American Military Engineers Gold Medal.—This medal, offered by the Society of American Military Engineers, is awarded annually to selected Air Force ROTC cadets in the next-to-last year of their engineering course and in the last year of such course. Nominations are made jointly by the Professor of Air Science and the Dean of the School of Engineering, and final selection is made nationally by a board of three senior Air Force officers.

National Defense Transportation Association Award.—This medal, offered by the National Defense Transportation Association, is awarded to the outstanding senior graduate who qualifies for the Air Force Specialty of Air Transportation Officer or Surface Transportation Officer. The award is given in recognition of leadership qualities, academic standing, aptitude for military service, and for meritorious achievement in furthering the aims and objectives of the Association in the promotion of preparedness for national defense.

Armed Forces Communications and Electronics Association Gold Medal.—These medals, offered by the Armed Forces Communications and Electronics Association, are awarded annually to outstanding senior Air Force ROTC cadets majoring in Electrical Engineering who demonstrate outstanding qualities of military leadership and distinguish themselves either academically or by leadership in campus activities.

Air Force Association Silver ROTC Medal.—This medal, offered by the Air Force Association, is awarded annually to that cadet who, after completion of Air Force ROTC summer training, is judged to be the outstanding cadet among those who have indicated their intention to apply for flying training upon graduation.

Reserve Officers' Association Medals.—Gold, silver, and bronze medals, offered by the Reserve Officers' Association of the District of Columbia, are awarded annually to those cadets enrolled in Air Science III, II, and I, respectively, who receive the highest grades for the current year in the leadership and academic phases of the Air Force ROTC course.

Chicago Tribune Gold ROTC Medal.—This medal, offered by *The Chicago Tribune*, is awarded each semester to that cadet enrolled in Air Science IV who has made an outstanding contribution to the effectiveness of the Air Force ROTC program by demonstrating the highest ideals of leadership and scholastic excellence.

Chicago Tribune Silver ROTC Medal.—This medal, offered by *The Chicago Tribune*, is awarded each semester to that cadet of the Air

Force ROTC Basic Course who has demonstrated outstanding leadership potential and who has maintained excellent scholastic standing in the University.

Sons of the American Revolution ROTC Medal.—This medal, offered by the District of Columbia Society, Sons of the American Revolution, is awarded annually to that freshman cadet of each Air Force ROTC flight who demonstrates to the maximum degree traits and qualities of good citizenship and meets the prescribed requirements established by the donor.

Unit Leadership Trophy.—This silver trophy, offered by Walter G. Bryte, Jr., Colonel, USAF (Retired), first Professor of Air Science at this University, is awarded annually to the Air Force ROTC flight adjudged best in a competitive review and inspection. The Cadet Commander of this flight is presented a set of engraved Second Lieutenant's insignia.

The Colonial Cadet Rifle Trophy.—This trophy, offered by Master Sergeant Jerome Gleason, USAF, first coach of the Air Force ROTC Rifle Team at this University, is awarded to that cadet who is judged to be the outstanding member of the rifle team.

Arnold Air Society Scroll.—This scroll, offered by the Carl Spaatz Squadron of the Arnold Air Society, is awarded annually to the outstanding cadet completing the basic course with a cumulative average of B or better in Air Force ROTC courses.

Pershing Rifles Gold, Silver, and Bronze Achievement Medals.—These medals are awarded annually by the National Headquarters to those Air Force ROTC cadets who are Pershing Riflemen and who are judged to be outstanding examples of the ideals of the Pershing Rifles.

Republic Aviation Award.—An engraved identification bracelet, offered by the Republic Aviation Corporation, is awarded annually to that cadet enrolled in Air Science III who, in competition, makes the most effective verbal presentation on the Air Power theme.

The Convair Award.—A Convair miniature airplane, offered by the Consolidated Vultee Aircraft Corporation is awarded annually to that cadet enrolled in Air Science II who achieves the highest cumulative grade in the basic course and who applies for flight training.

Reserve Officers' Association Junior Memberships.—Five junior memberships, offered by the Reserve Officers' Association of the District of Columbia, are awarded annually to the five Air Force ROTC cadets who obtain the highest grades in Air Science III.

National Rifle Association Club Champion Medal.—This medal, offered by the National Rifle Association, is awarded to a sophomore, junior, or senior member of the Air Force ROTC Rifle Team judged to be the outstanding member of the team based on marksmanship, participation in team matches, and contribution to the effectiveness of the team.

National Rifle Association Qualification Medals.—These medals offered by the National Rifle Association, are awarded annually to members of the Air Force ROTC Rifle Team qualifying as Expert, Sharp shooter, or Marksman in indoor rifle firing.

Air Force ROTC Rifle Team Awards.—Trophies, plaques, and medals are awarded annually to Air Force ROTC Rifle Teams through successful competition in the following:

- The Air Force ROTC Liaison Area Championship Matches
- The Army and Area Intercollegiate and Interscholastic Matches
- The Secretary of the Air Force ROTC Rifle Match
- The William Randolph Hearst National ROTC Rifle Matches.

FINANCIAL AID

LOAN FUNDS

The following loan funds are available to students in the University in accordance with the qualifications placed thereon by the donors. Inquiries should be directed to the Office of the Treasurer.

University Loan Fund.—The Trustees of The George Washington University have made available a fund for short-term loans to students.

Henry Strong Educational Foundation.—The Henry Strong Educational Foundation, established at Chicago under the will of General Henry Strong, makes available a fund for loans to both men and women students under the age of twenty-five years.

For information concerning full- and part-time employment, see "The Placement Office", page 25.

REGULATIONS

A student enrolled in the School of Engineering is required to conform to the University regulations and to comply with the rules and regulations of the School of Engineering.

A student who withdraws or is suspended, or is otherwise absent from the University for one semester or more, may re-enter and continue his work only under the rules and regulations in force at the time of his return.

If a student knowingly makes a false statement or conceals material information on an application for admission, registration card, or any other University document, his registration may be canceled and he will be ineligible (except by special action of the Faculty) for subsequent registration in any unit of the University.

ATTENDANCE

A student is not permitted to attend classes until registration has been completed and fees due have been paid. Regular attendance is required. A student may be dropped from any course for undue absence.

A student who has been suspended, either for delinquency in payment of fees or for any other reason, is not permitted to attend classes during the period of suspension.

The student is expected to attend every meeting of the course in which he is registered, fully prepared to carry on the work required. The student is held responsible for all work in the course, and all absences must be excused before provision will be made for him to make up the work missed. Excuses for absences from examinations which have been announced in advance can be obtained only by making written application to the instructor in charge of the course.

AMOUNT OF WORK

A full-time undergraduate student who is not on probation may take not more than twenty semester hours. A student employed more than twenty-four hours a week, who is not on probation, may take not more than ten semester hours.

A student previously unemployed who accepts employment subsequent to registration or at any time during a semester is required to report that fact immediately to the Dean, in order that adjustments in schedule may be made, if necessary, to bring his program within the Faculty's limitations upon the amount of work to be carried by an employed student.

ADVISORY SYSTEM

Every student entering the School of Engineering as an undergraduate degree candidate is assigned a permanent Faculty adviser—for the purpose of guiding the educational career of the student, providing assistance in his professional development as an engineer, establishing close relations between the Faculty and the student, and furnishing counsel and advice in all phases of the academic career of the student.

Faculty advisers counsel students on their programs of study, the achievement and maintenance of satisfactory scholastic performance, professional development, extracurricular activity as part of the educational process; and assist the entering student in orientation in the engineering discipline. The adviser represents the student in all cases requiring Faculty action.

Students who have not completed 70 semester hours satisfactorily are required to obtain their advisers' approval of programs of study prior to registration.

A student who has not completed the course work specified for the freshman and sophomore years is required to consult his adviser when so directed by the Dean, and to follow the recommendations of his adviser in all academic matters. However, advisers may not deny a student entry into any course or activity to which he is entitled under the regulations of the School of Engineering. Students having junior or senior status

are encouraged to consult their advisers. The Dean acts as temporary adviser to entering or transfer students pending assignment of their permanent advisers.

All students are encouraged to discuss college problems with their advisers or instructors at any time; and parents or guardians are invited to consult with the Dean and advisers, concerning any student problems.

Faculty advisers discharge their counseling duties in accordance with the high principles of their professional responsibility; however, the final responsibility for a student's action lies wholly with the student.

SCHOLARSHIP REQUIREMENTS

A student must maintain a quality-point index of at least 2.00 to be in good academic standing.

A student who fails to maintain the scholarship requirements of the School of Engineering may be dismissed from the University.

GRADES

Grades are not given out by instructors but are mailed to the student through the Office of the Registrar at the close of each semester. Upon request, a copy of the student's grades will be forwarded to his parent or guardian.

The following undergraduate grading system is used: excellent, *A*; good, *B*; average, *C*; passing, *D*; failing, *F*. Whenever a grade has not been assigned, the symbol *Inc.* (incomplete) or the symbol *W* (authorized withdrawal) will be recorded. The symbol *Inc.* indicates that a satisfactory explanation has been given to the instructor for the student's failure to complete the required work of the course. An "incomplete" can not be made up after the lapse of one calendar year except by permission of the Faculty. Courses from which a student has withdrawn by proper authorization will be indicated by the symbol *W*. No student may repeat for grade a course in which he has received a grade of *D* or above, unless required to do so by the department concerned.

For graduate work, grades are indicated as "excellent", "satisfactory", "unsatisfactory". The grade "satisfactory" signifies a high level of scholastic achievement.

QUALITY-POINT INDEX

Quality points are computed from grades as follows: *A*, four points; *B*, three points; *C*, two points; *D*, one point; *F*, no points, for each semester hour for which the student has registered.

Scholarship is computed in terms of the quality-point index, obtained by dividing the number of quality points by the number of semester hours for which the student has registered, both based on the complete col-

legiate record. Courses marked *W* or *Inc.*, are not considered in determining the index, except that courses marked *Inc.* will be considered when a formal grade is recorded, or at the close of a calendar year, which ever occurs first. If an "incomplete" is not superseded by a proper grade within the allotted time, it is computed as zero quality points.

Grades in courses taken at another institution or taken to satisfy entrance requirements are not considered in computing the quality-point index. Passing grades are essential in required physical education courses, but the grades so earned are not included in the quality-point index.

SCHOLARSHIP *

Undergraduate

In order to graduate, a student must have a quality-point index of at least 2.00 in all work taken at The George Washington University and accepted in the School of Engineering.

Mid-semester Warning.—At the end of the seventh week of each semester, instructors report to the Dean the names of those students whose scholarship is tentatively deemed unsatisfactory. A warning notice is sent to the student and a copy to his adviser. A student who receives warning notices is required to consult his instructor and his adviser immediately.

The adviser may prescribe diagnostic tests and/or remedial study to be completed before the end of the current semester.

Probation.—A student whose quality-point index falls below 2.00 will be placed on probation. This probation will extend over the period in which the student attempts twelve semester hours of study. In certain circumstances the period of probation may be extended.

A student on probation is required to follow a program of study, including remedial studies if necessary, prescribed by the Committee on Scholarship. A student on probation may not hold office or participate in the activities of any student organization or represent the School in any student activity.

Suspension.—A student whose quality-point index is below 2.00 at the end of his probationary period will be suspended. A student whose quality-point index falls below 2.00, after he has once been removed from probation, will be suspended.

At the time of his suspension a student may apply to the Committee on Scholarship for guidance concerning remedial action he should take during the period of his suspension.

A student suspended for poor scholarship may apply † to be readmitted

* For graduate scholarship requirements, see page 47.
† Application for readmission should be made two months in advance to permit the taking and making of readiness tests.

in the semester or summer session which begins next after an interval of one year. To be considered for readmission he will be required to pass tests or examinations prescribed by the Committee on Admission and Advanced Standing. No advanced standing will be assigned for any course work taken during the period of suspension. A student readmitted after suspension will be on probation and will be required to raise his quality-point index to 2.00 within twelve semester hours of study, or be suspended. A student suspended twice for poor scholarship will not be readmitted.

ACADEMIC DISHONESTY

Evidence of dishonesty on the part of any student will result in his suspension from the University upon the recommendation of the Dean's Council.

A student found guilty of dishonesty will be deprived of credit for all courses in the semester during which the dishonest act occurs.

A student may apply to be readmitted to the University in the semester or summer session which begins next after an interval of one year from the date of suspension.

CHANGES IN PROGRAM OF STUDIES

A student may not change or drop courses or change his status to that of auditor except with the approval of the Dean of the School upon presentation of adequate reasons for such changes.

Change from one section to another of the same course or from one major subject to another within the School may be made with the approval of the Dean. All requirements specified in the course of study to which the change is made must be satisfied.

Transfer from one college, school, or division to another may be made only with the approval of the deans concerned. Applications for such change should be made on the proper form, obtainable in the Office of the Director of Admissions, where it should be filed.

Withdrawal from a course or from the University, without academic or financial penalty, requires the permission of the Dean. Permission to withdraw from the University will not be granted a student who has not a clear financial record.

All charges for courses dropped without the approval of the Dean must be met by the student. Reporting the dropping of a course to an instructor does not effect its discontinuance. (For regulations concerning the refund of fees on withdrawal from courses or from the University, see pages 35-36.)

During the seven days following the first day of classes of a semester, additional courses may be added to the student's program with the approval of the instructor, the student's adviser, and the Dean.

No change in program may be made, without academic penalty, after the fourteenth day following the first day of classes of a semester, except in exceptional cases when the Dean, upon recommendation of the Committee on Scholarship, may approve withdrawal from *all courses*. Written request for such withdrawal, stating satisfactory reasons, should be addressed to the Committee on Scholarship.

Unauthorized withdrawal from a course at any time entails a penalty of failure in the course and financial responsibility for the full fee for the course.

HONORS LIST

The Faculty of the School of Engineering recognizes meritorious scholastic achievement by an Honors List, containing in alphabetical order the names of candidates for undergraduate degrees in engineering, whose scholastic achievement satisfies all of the following requirements:

1. The candidate's cumulative quality-point index is equal to or exceeds 3.00.
2. At least thirty semester hours of credit have been earned while a degree candidate in the School of Engineering.
3. At least fifteen (part-time student) or thirty (full-time student) semester hours of credit in an engineering degree curriculum have been earned in the two semesters immediately preceding the award.
4. No grade below *C* has been received during the qualifying period stated above.
5. No disciplinary action has been taken in respect to the student.

The Honors List is prepared at the end of the fall and spring semesters, and displayed in an appropriate public place in the School of Engineering. A notation is made on the student's record each time his name is included in an Honors List.

CREDIT

Credit toward a degree is given only after regular registration for and satisfactory completion of the required work of classes in the University, or upon the granting of advanced standing in accordance with the regulations of the School. A student who takes a course as an auditor may not take the same course later for credit.

On request the Registrar will issue to the student a balance sheet showing the amount of work completed and the requirements, both quantitative and qualitative, remaining to be met for the degree.

TRANSCRIPTS OF RECORD

Official transcripts of student records will be forwarded on request to other institutions. Unofficial copies of records will be issued to the student on request. No charge is made for the first transcript; a fee of one

dollar is charged for each one thereafter. No certificate of work done will be issued for a student who does not have a clear financial record.

SUMMER SCHOOL CREDIT

A student who plans to attend summer school sessions at another institution with the intention of having credits so obtained apply toward graduation from this University must first secure the written approval of the Dean. In no event will such credits be recognized to an amount in excess of that which might be earned in a similar period in this institution.

PHYSICAL EDUCATION REQUIREMENTS

Freshmen and sophomores in the School of Engineering are required to take Physical Education 1-2 and 11-12 unless (1) they are registered for less than 10 semester hours, or (2) regular employment during the day makes it necessary to attend classes during the evening hours, or (3) they are enrolled in the Air Force ROTC, or (4) they are veterans.

Any other exemptions will be granted only upon written petition which has been recommended by the physical education department concerned and approved by the Dean of the School.

A student entering the University with advanced standing is not exempt from the physical education requirements unless he has satisfactorily met the requirements elsewhere. Courses in military training are not accepted in satisfaction of these requirements.

The required medical and physical examinations, as specified by the departments of physical education, will be arranged at the time of registration.

USE OF CORRECT ENGLISH

Any student whose written or spoken English in any course whatever is deemed unsatisfactory may be reported by the instructor to the Dean's Council. The Council may assign supplementary work, without academic credit, varying in amount with the needs of the student. If the work prescribed is equivalent to a course, the regular tuition fee is charged. The granting of a degree may be delayed for failure to make up any such deficiency in English to the satisfaction of the Dean's Council.

GRADUATION REQUIREMENTS

To be recommended by the Faculty for graduation a student must have met the admission requirement of the School, completed satisfactorily the scholarship, curriculum, residence, and other requirements for the degree for which he is registered, and be free from all indebtedness to the University.

Application for Graduation.—Application for a degree must be filed

in the Office of the Registrar at the time of registration for the last semester of the senior or final year.

Curriculum.—Curriculum requirements for the Bachelor's degrees are stated on pages 52-55; for the Master's degrees, on pages 57-60.

Graduate Record Examination.—All candidates for Bachelor's degrees are required to take two parts of the Graduate Record Examination in the University's institutional testing program. The examinations are conducted by the University twice a year: the Fall Testing Session (December 12, 1959), for seniors graduating in February, and the Spring Session (April 9, 1960) for those graduating in June or October. Dates of the examinations are announced in the *Schedule of Classes*.

Each senior required to take the Graduate Record Examination must register for it in the office of his dean when he registers for his final regular semester of study (excluding summer sessions). A \$5 examination fee is payable at the time of registration.

Students will receive individual reports of test scores and may avail themselves of the regular transcript services of the Educational Testing Service. By special permission seniors who expect to graduate in June may take the Graduate Record Examination at the previous Fall Testing Session, so as to have transcripts available early in the year when applying for admission to graduate schools.

Residence.—For the Bachelor's degrees, a minimum of one year or thirty-six semester hours must be completed in residence. Summer work may be counted in residence, but in no case may the period of residence aggregate less than thirty weeks. Unless special permission is granted by the Dean to pursue work elsewhere, the work of the senior or final year must be completed in residence.

Attendance and Conduct.—The University reserves the right to refuse to confer a degree upon a candidate whose attendance or conduct has been unsatisfactory.

Master's Problem.—A comprehensive problem submitted in partial satisfaction of requirements for a Master's degree must be presented in its final form to the Dean not later than the date specified in the University calendar. Three copies of the problem are required, one typewritten original and two legible and complete carbon copies. Detailed instructions for the styling of all Master's problems should be obtained from the Dean.

Accepted problems with accompanying drawings become the property of the University and are deposited in the University Library, where the duplicate copies are bound and made available for circulation. Permission to publish or adapt material in the problem must be secured from the Dean.

Presence at Graduation.—A candidate is required to be present at the

graduation exercises unless written application for graduation *in absentia* is approved by the Dean.

HONORS

With distinction.—The degree may be conferred "with distinction", at the discretion of the Faculty, if a student attains a quality-point index of 3.50 or higher on all work taken at this institution except that taken during the semester immediately preceding the granting of the degree. To be eligible for this honor a student must have completed at this institution at least one-half of the work required for the degree.

Special honors.—Special honors may be awarded by the Faculty to any member of the graduating class for outstanding achievement in the student's major field of work on recommendation of the major department, under the following regulations:

1. The student must have his candidacy for special honors approved by the faculty member representing the major department or field not later than the beginning of the senior year.

2. The student must meet such other conditions as may be set at the time his candidacy is approved.

3. No student will be awarded special honors unless he has a quality-point index of at least 3.00 on all work taken at this institution except that taken during the semester immediately preceding the granting of the degree.

4. To be eligible for honors a student must have completed at this institution at least one-half of the work required for the degree prior to the beginning of the semester immediately preceding the granting of the degree.

Military honors.—An Air Force ROTC cadet may be designated a "Distinguished Air Force ROTC Cadet" if he (1) has completed Air Science III with an academic standing among the upper third of the students enrolled therein; (2) has an accumulative academic average of B or better; (3) possesses high moral character and definite aptitude for service in the Air Force; (4) has distinguished himself by demonstrated leadership through participation in recognized extracurricular activities and while in attendance at an Air Force ROTC Summer Training Unit. A "Distinguished Air Force ROTC Cadet" is authorized to wear a "Distinguished" badge centered above the right breast pocket of the uniform. He may submit an application for a regular commission in the United States Air Force, which is given final consideration upon his designation as a "Distinguished Air Force ROTC Graduate".

An Air Force ROTC cadet may be designated a "Distinguished Air Force ROTC Graduate" if he has (1) been designated a "Distinguished Air Force ROTC Cadet" and maintained the standards required of a "Distinguished Air Force ROTC Cadet" during the period between

designation and graduation; (2) completed the Air Force ROTC Advanced Course; and (3) completed the requirements for the Bachelor's degree. A "Distinguished Air Force ROTC Graduate" will be presented with a certificate signed by the Commandant, Air Force ROTC, and, if he made application, will be considered for a regular commission in the United States Air Force.

THE LIBRARY

A student registered in the University is entitled to the reference use of the University Library. The Student Identification Card, issued upon the payment of fees, must be presented as identification.

The loan period for most books available for home circulation is two weeks, with an additional two-week renewal. A fine of five cents will be charged for each day a book is overdue. Any book which does circulate is subject to recall by the Librarian at any time. Reserve books for collateral reading must be used in the reading rooms when the Library is open. With special permission they may be drawn for overnight use when the Library closes. A fine of twenty-five cents will be charged for the first hour or fraction of an hour and five cents for each hour or fraction thereafter that a reserve book is overdue. Grades of a student will be withheld until his library record is clear.

HOURS

The University Library is open from 9:00 A.M. to 10:00 P.M. each class day (Saturday 9:00 A.M. to 5:00 P.M.), and from 2:00 to 6:00 P.M. on Sunday.

RIGHT TO DISMISS STUDENTS

The right is reserved by the University to dismiss or exclude any student from the University, or from any class or classes, whenever, in the interest of the student or the University, the University Administration deems it advisable to do so.

RIGHT TO CHANGE RULES

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.

PROPERTY RESPONSIBILITY

The University is not responsible for the loss of personal property in any University building. A "Lost and Found" Office is maintained in the Student Union.

THE BACHELOR'S DEGREES

The Bachelor's degrees are: Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, and Bachelor of Science in Engineering.

The degree of Bachelor of Science in Engineering may be earned with any of the following options: Chemistry, Engineering Administration, Machine Computer, Mathematics, or Physics.

Curricula leading to the degrees of Bachelor of Civil Engineering, Bachelor of Mechanical Engineering, and Bachelor of Electrical Engineering are accredited by the Engineers' Council for Professional Development, the recognized accrediting body of the engineering profession.

CURRICULUM REQUIREMENTS

The satisfactory completion of one of the following curricula is required.

Physical Education is required of all students in the freshman and sophomore years. (See "Physical Education Requirements", page 48.)

Variations from the prescribed curricula may be made, with the permission of the Dean's Council. A student desiring to omit a required course and substitute another must make written application to the Dean presenting satisfactory reasons for the substitution; written approval must be obtained and the required fee paid before registration for the course.

A student who is absent from the University for one semester or more is required to satisfy the curriculum requirements existing at the time of his return unless during his absence he maintains "in residence" status; see page 34.

FRESHMAN YEAR (FOR ALL ENGINEERING CURRICULA)*

	Hours
Chem 11-12	General Chemistry
† Eng. 1	English Composition
Math 12	Analytic Geometry
Math 29, 30, 31	Calculus I, II, III
ME 9	Introduction to Engineering
ME 10	Graphical Communication
Phys. Ed.	See page 48 for statement of requirement.
Phys. 11	Introductory Physics
Phys. 14	General Physics

Total

ROTC—Air Force ROTC students substitute A- Science 1-2 and 20-22 for Physical Education 1-2 (2), and may postpone English 1 until the sophomore year.

* Exceptional students may qualify for admission to advanced courses by a satisfactory placement examination.

† Before students are registered in English 1, they are tested in the minimum essential vocabulary, spelling, grammar, standard usage, and writing skills. Those students who are marked superior may, upon passing further tests, be exempted from one or both semesters of the English Composition course. Those who are recommended for English 1 are assigned to English A, for which credit will be given toward the minimum requirements.

SOPHOMORE YEAR (FOR ALL ENGINEERING CURRICULA)

	Semester Hours
CE 12	Surveying (for B.C.E. candidates only).....
CE 21	Statics.....
CE 24	Strength of Materials.....
EE 11	Electric Circuits.....
EE 12	Electric Machinery.....
Eng. 2	English Composition.....
Math. 111, 112	Mathematics for Engineers and Physicists I, II.....
Phys. Ed.	See page 48 for statement of requirement.
Phys. 15, 16	General Physics.....
• Elective	In humanities or social studies (for B.E.E., B.M.E., and B.S. in Eng. candidates only).....
Elective	In humanities or social studies (see page 79).....
	<hr/> Total.....

ROTC.—Air Force ROTC students substitute Air Science 11-12 and 51-52 (6) for Physical Education 11-12 (2) and Elective (3).

BACHELOR OF CIVIL ENGINEERING

JUNIOR YEAR

	Semester Hours
CE 121	Dynamics.....
CE 125	Engineering Materials.....
CE 132	Fluid Mechanics.....
CE 143-44	Structural Theory I-II.....
EE 102	Engineering Electronics.....
ME 113	Thermodynamics I.....
ME 118	Heat Transfer.....
Elective	In humanities or social studies (see page 79).....
	<hr/> Total.....

ROTC.—Air Force ROTC students substitute Air Science 101-2 (6) for Elective (4).

SENIOR YEAR

	Semester Hours
CE 128	Substructures.....
CE 135	Hydraulic Engineering.....
CE 138	Sanitary Engineering.....
CE 145	Metal Structures.....
CE 146	Reinforced Concrete.....
CE 154	Structural Dynamics.....
CE 157	Advanced Strength of Materials.....
CE 163	Transportation Engineering.....
CE 168	Regional and Urban Planning.....
Elective	In humanities or social studies (see page 79).....
Elective	Technical Elective.....
	<hr/> Total.....

ROTC.—Air Force ROTC students substitute Air Science 151-52 (6) for Technical Elective (3).

• B.E.E. candidates may elect Speech 1 or English 11

BACHELOR OF ELECTRICAL ENGINEERING

JUNIOR YEAR

		Semester Hours
CE 121	Dynamics	3
EE 102	Engineering Electronics	3
EE 103	Electric and Magnetic Fields	3
EE 104	Field Analysis	3
EE 107	Steady-state Network Analysis	3
EE 111, 112	Electrical Measurements	4
EE 113-14	Electric Power Laboratory	4
EE 118	Electrical Energy Conversion	3
EE 122	Measurements and Electronics Laboratory	3
Phys 116	Quantum and Solid State Physics	3
Elective	In humanities or social studies (see page 79)	3

Total

ROTC.—Air Force ROTC students substitute Air Science 101-2 (6) for Elective (1).

SENIOR YEAR

		Semester Hours
CE 132	Fluid Mechanics	3
EE 123	Electronic Devices and Systems Laboratory	3
EE 124	High-frequency Communications Laboratory	3
EE 127	General Network Analysis	3
EE 131	Engineering Analysis	3
EE 136	Electromagnetic Waves	3
EE 137	Electronic Circuits and Systems	3
EE 171	Digital Circuitry and Systems	3
EE 189-92	Seminar in Electrical Engineering	4
ES 154	Automatic Control	3
ME 113	Thermodynamics I	3
Elective	In humanities or social studies (see page 79)	3

Total

ROTC.—Air Force ROTC students substitute Air Science 151-52 (6) for Elective (1).

BACHELOR OF MECHANICAL ENGINEERING

JUNIOR YEAR

		Semester Hours
CE 121	Dynamics	3
CE 125	Engineering Materials	3
CE 132	Fluid Mechanics	3
EE 102	Engineering Electronics	3
ME 100	Analytical Kinematics	3
ME 111, 114	Thermodynamics I, II	3
ME 118	Heat Transfer	3
ME 120	Physical Metallurgy	3
Phys 116	Quantum and Solid State Physics	3
Phys 191	Nuclear Reactors	3
Elective	In humanities or social studies (see page 79)	3

Total

ROTC.—Air Force ROTC students substitute Air Science 101-2 (6) for Elective (2).

SENIOR YEAR

	Semester Hours
CE 157	
ME 123	Advanced Strength of Materials 3
ME 124	Advanced Dynamics I 3
ME 135-36	Advanced Dynamics II 3
ME 139	Thermal Power 6
ME 141	Fluid Machinery 3
ME 146	Production Analysis 3
ES 154	Dynamics of Compressible Fluids 3
Elective	Automatic Control 4
	In humanities or social studies (see page 79) 6
Total	34

ROTC.—Air Force ROTC students substitute Air Science 151-52 (6) for Elective (3).

BACHELOR OF SCIENCE IN ENGINEERING

JUNIOR AND SENIOR YEARS

	Semester Hours
CE 121	Dynamics 3
CE 125	Engineering Materials 4
CE 132	Fluid Mechanics 3
EE 102	Engineering Electronics 3
EE 103	Electric and Magnetic Fields 3
ME 100	Analytical Kinematics 3
ME 113	Thermodynamics I 3
ME 118	Heat Transfer 3
ME 120	Physical Metallurgy 3
Phys 116	Quantum and Solid State Physics 3
Option	Total of required courses 31

As approved by the Department of Option and by the Dean of the School of Engineering 30

In humanities or social studies (see page 79) 9

Total 70

ROTC.—Air Force ROTC students substitute Air Science 151-52 and 151-52 (3) for Elective (3) and Option course (3).

The Bachelor of Science in Engineering curriculum provides training in the basic physical principles employed in engineering and in engineering methods of analysis, and in addition, offers an opportunity for study in optional fields in which the student has special interest.

Optional study can be selected from the fields of Chemistry, Engineering Administration, Machine Computer, Mathematics, or Physics. The program of study in the option is formulated by the department concerned in conference with the student. The program, bearing the approval of the Executive Officer of the department concerned, must be submitted by the student to the Dean before the beginning of the junior year.

THE MASTER'S DEGREES

Upon satisfactory completion of appropriate graduate requirements, the degree of Master of Science in Engineering or Master of Engineering Administration is conferred.

Study for the Master's degree is based upon a faculty-student relationship in which the ability and needs of the individual student are important elements in determining the curriculum. Programs are not restricted to one department or to a single field or type of study. They may include special instruction by assigned members of the engineering faculty or approved courses offered in other colleges and schools of the University. The Committee on Graduate Studies has the responsibility for establishing each student's program and for providing for its direction.

ADMISSION TO GRADUATE STUDY

For admission to graduate study the student must hold a Bachelor's degree from a recognized institution; satisfy the Committee on Graduate Studies of his capacity for productive work in the discipline; and give evidence of preparation which, in the opinion of the Committee, is adequate for graduate study in the field selected.

Applicants who have significant deficiencies in their preparation for graduate study may undertake prescribed undergraduate programs to qualify for admission as graduate students in the School of Engineering.

In some cases such undergraduate study may be carried on in addition to a limited graduate program. In no case may the undergraduate courses fulfill any part of the requirements for the graduate degree.

ADMISSION TO DEGREE CANDIDACY

Application for admission to candidacy for a Master's degree must be made in writing to the Committee on Graduate Studies. To be accepted the applicant must have (1) been accepted for graduate study, (2) satisfactorily completed nine semester hours of graduate courses, and (3) give evidence of satisfactory personal and intellectual qualifications. In exceptional cases the requirement of nine semester hours of graduate courses may be reduced.

ADVANCED STANDING

Graduate courses completed before admission to graduate study are not transferrable for degree credit. The Committee on Graduate Studies has the discretion, however, to consider them in establishing individualized programs. Course work to satisfy degree requirements in another school or college of the University may not be so applied in the School of Engineering.

REQUIREMENTS FOR THE DEGREES

Residence

The candidate for a Master's degree must complete a minimum of one year of full-time study, or the equivalent in part-time study, under the direction of the Committee on Graduate Studies. A full-time student must complete all requirements for the degree within three years; a part-time student, within five years.

Scholarship

A minimum grade of "Satisfactory" is required in all courses. A student who makes one grade of "Unsatisfactory" may repeat the course once, or he may appeal to the Committee on Graduate Studies for guidance. A student who receives two or more grades of "Unsatisfactory" will not be permitted to enroll further in the School of Engineering until he demonstrates by examination, or as the Committee may direct, that his deficiencies in course work have been removed. A grade of *B* or better is required for undergraduate courses taken to remove deficiencies in preparation for graduate study.

Master's Problem

The degree candidate must submit an acceptable Problem to demonstrate his ability to make independent use of the knowledge and discipline of thought acquired and developed by graduate study, and to furnish objective evidence of constructive power in a given field. Work of a suitable character for which the student has professional responsibility may be considered, whether done on or off campus, provided no significant amount of work is completed without faculty supervision.

Comprehensive Examination

To demonstrate substantial understanding of principles and methods of their use in the area of his interest, the student must pass a comprehensive examination, written, oral, or both, as prescribed by the Committee on Graduate Studies. This examination will not be taken until the candidate has successfully completed the prescribed program of study and submitted an acceptable Master's Problem.

THE DEGREE OF MASTER OF SCIENCE IN ENGINEERING

The objective of this discipline is a substantial comprehension of scientific principles and methods for their use, as applied in modern engineering. Increased understanding of engineering science and its use in solving engineering problems are sought, rather than a breadth of familiarity with applications and techniques.

A program of study consisting of at least twenty-four semester hours of graduate courses to prepare the candidate for his comprehensive examination is formulated from the following areas with particular attention to the individual student's needs and objectives. The program may provide for broad coverage in a variety of fields or may be designed to give some degree of specialization in a particular area, as determined by conference with the Committee at the time of admission to candidacy.

The level of the courses ordinarily requires as prerequisite the satisfactory completion of at least one undergraduate course in mathematics beyond the first course in ordinary differential equations and at least one in the area of the graduate course to be undertaken.

REQUIRED COURSES

Upon admission to graduate study, the following courses must be taken prior to application for admission to candidacy for the degree:

ES 211 Analysis of Engineering Systems I (3)

ES 217 Analytical Mechanics (3)

In addition a choice must be made of one or two courses in the areas marked by an asterisk in the Fundamental Engineering group below.

PROGRAM OF STUDY

After admission to candidacy for the degree, the balance of the program may be arranged in consultation with the Committee on Graduate Studies from the following:

Basic

Mathematics.—Theory of functions of a complex variable, mathematical statistics, mathematical probability, vectors, tensors, matrices.

Physics.—Classical field theory, quantum mechanics, solid state physics, nuclear physics.

Applied Mathematics.—Numerical and graphical analysis, advanced mathematics for engineers.

Fundamental Engineering

- *Automatic Control
- *Elasticity
- Elastic Stability
- *Electric Networks
- *Electromagnetic Fields
- Electronics
- *Fluid Dynamics
- Gas Dynamics

- Heat Transfer
- Modulation and Noise
- Nonlinear Mechanics
- Plates and Shells
- Plasticity
- *Structural Theory
- *Thermodynamics
- *Transients

Elective

This group is comprised of courses offered occasionally in such areas as digital computers, high-speed aerodynamics, jet propulsion, potential theory, structural analysis, and transistors. In addition, graduate courses in areas not included in the Basic group offered by the departments of Mathematics, Statistics, Physics, and Chemistry may be taken for degree credit with the approval of the Committee. In general, work in areas which are characterized by a scientific discipline may be accepted in satisfaction of course requirements for the degree of Master of Science in Engineering.

THE DEGREE OF MASTER OF ENGINEERING ADMINISTRATION

The objective of this discipline is to develop an understanding of the principles and a competence in the practices of administration as applied to engineering and scientific activities. Knowledge and understanding are sought rather than mere familiarity with techniques.

A study program is prescribed for each candidate, in accordance with his preparation and objective, by the Committee on Graduate Studies or an assigned adviser. Programs are integrated sequences of courses.

The degree of Master of Engineering Administration is granted upon the successful completion of (1) thirty semester hours of graduate courses, including the written Master's Problem, and (2) the Comprehensive Examination.

PREREQUISITE TO ADMISSION TO CANDIDACY

In addition to the requirements for admission to candidacy stated on page 56, the applicant must have a knowledge of the principles of human relations, the fundamentals of accounting, and the fundamentals of statistics. This requirement may be met (1) by the successful completion of the following undergraduate courses or an approved equivalent: Psychology 145 *Principles of Human Relations*, Accounting 3 *General Accounting*, Statistics 51 *Introduction to Business and Economic Statistics*, or (2) by demonstrating an acceptable knowledge acquired from experience in the subject fields.

PROGRAM OF STUDY

The content of the courses immediately following is considered essential knowledge for every candidate for the degree of Master of Engineering Administration. The candidate is required to complete all of the courses except those in which he (1) has successfully completed graduate study or (2) can demonstrate to the Committee on Graduate Studies an acceptable knowledge of the course field.

EA 201	Engineering Administration I.....	Semester Hours
EA 202	Engineering Administration II.....	3
EA 271	Operations Research	3
EA 290	Problems in Engineering Administration.....	3
EA 291	Master's Problem	3

The following courses provide knowledge in certain special areas of significance in engineering administration. The candidate is required to select at least one; it is preferable that he elect all three.

EA 251	Management of Research and Development.....	Semester Hours
EA 252	Production and Maintenance Management.....	3
Stat. 262	Managerial Statistics and Quality Control.....	3

Elective

Courses are to be elected to provide a total of 30 semester hours for the program.

EA 191	Engineering Law	Semester Hours
EA 205	Engineer and Society.....	3
EA 206	Production Management Development and Personnel Relations	3
EA 211	Communication of Ideas	3
EA 261	Economic Analysis in Engineering Planning.....	3
EA 263	Quantitative Techniques of Engineering Administration	3
EA 272	Problems in Operations Research.....	3
EA 273-74	Techniques of Operations Research	6
EA 295	Applied Research in Engineering Administration (arr.)	3
EA 296	Research in Engineering Administration (arr.)	3
Acct. 211-12	Managerial Accounting	3
Acct. 293	Budget Preparation and Control	3
Bus. Adm. 250	Contract Administration	3
Geog. 271	Engineering Geography	3
Pub. Adm. 213	Administration in Government	3
Stat. 271-72	Statistical Information Theory	3
Elective	(To be selected from Engineering or the sciences, as approved by the Committee on Graduate Studies	3-6

COURSES OF INSTRUCTION

COURSES OF INSTRUCTION

On the following pages, under the alphabetically arranged names of the departments of instruction, are listed the courses of instruction offered in the School of Engineering. Also listed are courses offered by other schools and colleges of the University, but required or accepted as electives for the degrees in engineering. The courses as here listed are subject to some slight change. Students are referred to the *Schedule of Classes*, which is available prior to the opening of each semester, for the hourly scheduling of all courses of instruction.

The University reserves the right to withdraw any course announced.

EXPLANATION OF COURSE NUMBERS

The following system of numbering is used to identify courses.

Undergraduate courses.—Courses numbered from 1 to 100 are planned for students in the freshman and sophomore years. Courses numbered from 101 to 200 are planned for students in the junior and senior years.

Graduate courses.—Courses numbered from 201 to 300 are planned primarily for graduate students. They are open, with the approval of the Chairman of the Committee on Graduate Studies and the Dean, to qualified seniors.

INDICATION OF THE AMOUNT OF CREDIT

The number of semester hours given for the satisfactory completion of a course is, in most cases, indicated in parentheses after the name of the course. Thus, a year course giving three hours of credit each semester is marked (3-3), and a semester course giving three hours of credit is marked (3). A semester hour usually consists of the completion of one fifty-minute period of class work or of one laboratory period a week for one semester.

ENGINEERING

UNDERGRADUATE COURSES

CIVIL ENGINEERING

12 Surveying (3)

Spring: lecture (2 hours), field work (3 hours)—evening and Saturday.

Principles, methods, and instruments used in making space measurements, including layout, elements of simple curves, coordinate system, and treatment of observational errors. Prerequisite: Mathematics 12, Mechanical Engineering 10. Surveying fee, \$13.

21 Statics (3)

Fall—morning and evening; spring—evening.

Composition and resolution of forces in two and three dimensions; equilibrium; centroids, centers of gravity, moments of inertia, friction; analysis of trusses, frames, and cables; shear and bending moment in beams; virtual work. Prerequisite: Physics 14. Prerequisite or concurrent registration: Mathematics 31.

24 Strength of Materials (3)

Fall—evening; spring—morning and evening; summer 1959.

Development and application of principles necessary to analyze stresses in and deformation of simple machine and structural components, combined stresses, strain energy, buckling of columns and beams, design of simple members and joints, composite members. Prerequisite: Civil Engineering 21, Mathematics 31.

121 Dynamics (3)

Fall—morning and evening; spring—evening.

Kinematics; kinetic friction; translation, rotation, and plane motion of rigid bodies and systems; work, energy, power; impulse; momentum; impact; simple vibrations. Prerequisite: Civil Engineering 21, Mathematics 111.

125 Engineering Materials (4)

Fall: lecture—morning and evening; laboratory—afternoon and evening.

Mechanical behavior of engineering materials; including mechanical testing, elasticity, plasticity, fracture, ductility, creep, and fatigue; elements of metallurgy and physics of metals. Prerequisite: Chemistry 12, Physics 16, Civil Engineering 24. Laboratory fee, \$11.

128 Substructures (3)

1959-60 and alternate years: spring—evening; 1960-61 and alternate years: spring—afternoon.

A unified study of substructure materials including soils and rocks and their properties as foundation material, creep, plastic expansion, lateral earth pressure, bearing capacity, and settlement; analysis of simple substructures. Prerequisite: Civil Engineering 125, 144.

132 Fluid Mechanics (3)

Spring: lecture—morning and evening; laboratory—afternoon and evening.

Development of the fundamental principles of flow of viscous and ideal compressible and incompressible fluids; dimensional analysis and model theory; laboratory work on fluid mechanics principles; analysis of tests, and systematic observations of phenomena. Prerequisite: Mathematics 111, Civil Engineering 121, Mechanical Engineering 113. Laboratory fee, \$11.

135 *Hydraulic Engineering* (3)

Fall—evening.

Applied fluid mechanics, hydrology, principles of water conservation; introduction to flood control, water power, drainage and irrigation, canalization of rivers, multiple-purpose projects, and general development of water resources. Prerequisite: Civil Engineering 132.

138 *Sanitary Engineering* (3)

Spring—evening.

Collection, storage, purification, and distribution of water; sewerage systems and treatment of sewage. Prerequisite: Chemistry 12, Civil Engineering 135.

143-44 *Structural Theory I-II* (4-4)

1959-60 and alternate years: academic year—evening; 1960-61 and alternate years: academic year—afternoon.

Theory and structural behavior of statically determinate and indeterminate beams, frames, trusses, and arches, and the application of basic principles to their analysis; structural laboratory including structural model analysis. Prerequisite or concurrent registration: Civil Engineering 125. Laboratory fee, \$11 a semester.

145 *Metal Structures* (3)

1959-60 and alternate years: spring—afternoon; 1960-61 and alternate years: spring—evening.

Application of structural theory to the analysis and design of metal structures under static and moving loads. Prerequisite: Civil Engineering 144, 157.

146 *Reinforced Concrete* (3)

1959-60 and alternate years: fall—afternoon; 1960-61 and alternate years: fall—evening.

Theory and design of plain and reinforced concrete structures. Prerequisite: Civil Engineering 144. Prerequisite or concurrent registration: Civil Engineering 157.

154 *Structural Dynamics* (3)

1959-60 and alternate years: spring—evening; 1960-61 and alternate years: spring—afternoon.

Theory of mechanical vibrations; vibrations in and dynamic loading on structures. Prerequisite: Civil Engineering 144, Mathematics 112.

157 *Advanced Strength of Materials* (3)

1959-60 and alternate years: fall—evening; 1960-61 and alternate years: fall—late afternoon.

Selected topics in mechanics of deformable bodies, including: stresses

at a point, general flexure, bending of curved beams, torsion, stress concentration, limitations of theories of failure, thick tubes, energy method, plates and shells, and deformations beyond the elastic limit. Prerequisite: Civil Engineering 125, Mathematics 112. Prerequisite or concurrent registration: Civil Engineering 144 or Mechanical Engineering 123.

163 *Transportation Engineering* (3)

Fall—evening.

Economics, location, construction, operation, and maintenance of transportation systems. Prerequisite: Civil Engineering 12, 125, senior standing or permission of the instructor.

168 *Regional and Urban Planning* (3)

Spring—evening.

Introduction to regional and urban planning with emphasis on requirements for transportation systems. Prerequisite: Civil Engineering 163

195-96 *Problems in Civil Engineering* (arr.)

Academic year—as arranged.

Special problems approved by the Staff. Prerequisite: senior standing.

ELECTRICAL ENGINEERING

11 *Electric Circuits* (3)

Fall—morning and evening; spring—morning and evening.

Current, voltage, power, Kirchhoff's laws, steady-state mesh and node analysis, simple transients, matrices and determinants, network theorems, resonance, balanced polyphase circuits. Prerequisite: Mathematics 30. Prerequisite or concurrent registration: Physics 15.

12 *Electric Machinery* (3)

Spring—morning and evening.

Analysis of d-c and a-c rotating machines in steady state, theory of idealized transformers. Emphasis is placed on electromechanical energy conversion. Prerequisite: Electrical Engineering 11.

102 *Engineering Electronics* (3)

Spring—morning and evening.

Introductory treatment of: physical concepts of electron-tube and semi-conductor devices, their electrical characteristics, and their use in electronic circuit applications. Linear and nonlinear methods of analysis. Prerequisite: Electrical Engineering 11, Mathematics 112.

103 *Electric and Magnetic Fields* (3)

Fall—morning and evening.

Introduction to vector analysis; basic concepts of electrostatics and magnetics. Analysis of resistance, capacitance, inductance, forces, magnetic circuits. Prerequisite: Electrical Engineering 11, Mathematics 112.

104 *Field Analysis* (3)

Spring—morning and evening.

Solid angle, method of images, vector potential, magnetic scalar potential, conformal mapping, solutions of Laplace's equation, field plotting, analogues. Particle motion in electric and magnetic fields. Introduction to Maxwell's equations. Prerequisite: Electrical Engineering 103, Mathematics 112.

107 *Steady-state Network Analysis* (3)

Fall—morning and evening.

Four-terminal networks, network theorems, poles and zeros of network functions, resonance, filters, coupled circuits, transmission lines, Fourier series, matrices. Prerequisite: Electrical Engineering 11, Mathematics 112.

111 *Electrical Measurements* (2)

Fall—morning and evening.

Systems of units, theory of errors, d-c indicating instruments and galvanometer dynamics, precision measurement of voltage, current, and resistance. Prerequisite: Electrical Engineering 11, Mathematics 112.

112 *Electrical Measurements* (2)

Spring—morning and evening.

Theory of a-c indicating instruments, a-c bridges, waveforms, frequency measurements, measurement of power and energy. Prerequisite: Electrical Engineering 107, 111.

113-14 *Electric Power Laboratory* (2-2)

Fall—afternoon and evening; spring—afternoon and evening.

Experiments in d-c and a-c circuits, instruments, and machines. Prerequisite to Electrical Engineering 113: Electrical Engineering 12. Prerequisite to Electrical Engineering 114: Electrical Engineering 113. Laboratory fee, \$11 a semester.

118 *Electrical Energy Conversion* (3)

Spring—morning and evening.

Analysis of physical systems involving electrical, mechanical, and thermal energy conversion; mathematical formulations using the Euler-Lagrange equation; transient and steady-state analysis of special machines including the generalized rotating energy converter. Prerequisite: Electrical Engineering 12, Mathematics 112. Prerequisite or concurrent registration: Electrical Engineering 104, 112.

122 Measurements and Electronics Laboratory (2)

Spring—afternoon and evening.

Experiments with d-c measuring instruments, oscilloscopes, and impedance bridges; network theorems and resonance; characteristics of electronic devices and simple amplifiers. Prerequisite: Electrical Engineering 111. Prerequisite or concurrent registration: Electrical Engineering 102, 112. Laboratory fee, \$11.

123 Electronic Devices and Systems Laboratory (2)

Fall—afternoon and evening.

Theory and use of electronic devices and instruments. Experiments in active networks, tubes and transistors, nonlinear elements, complex waveform analysis, transfer characteristics. Prerequisite: Electrical Engineering 112, 122. Prerequisite or concurrent registration: Electrical Engineering 137. Laboratory fee, \$11.

124 High-frequency Communications Laboratory (2)

Spring—afternoon and evening.

Experiments at radio- and microwave-frequencies: impedance, amplifiers, transmitters, lines, waveguides, slotted lines, antennas, horns, power, oscillators. Prerequisite: Electrical Engineering 123. Prerequisite or concurrent registration: Electrical Engineering 130. Laboratory fee, \$11.

127 General Network Analysis (3)

Fall—morning and evening.

Solutions of linear integro-differential equations using transformation calculus. Laplace transforms, Fourier integral, poles and zeros of network functions, correlation of time and frequency domains, one-terminal- and two-terminal-pair networks. Prerequisite: Electrical Engineering 107, Mathematics 112.

133 Engineering Analysis (3)

Fall—morning.

Application of fundamental principles of engineering, physics, and mathematics to problems in various fields of engineering. Emphasis is placed on problem solving using concepts previously studied. Prerequisite: Mathematics 112; Civil Engineering 121; Electrical Engineering 102, 118; Physics 16.

136 Electromagnetic Waves (3)

Spring—morning and evening.

Electromagnetic waves in bounded media, radiation from antennas, high-frequency transmission lines, cavity resonators and microwave devices. Prerequisite: Electrical Engineering 104, Mathematics 112.

137 *Electronic Circuits and Systems* (3)

Fall—morning and evening.

Analysis of linear amplifiers, concepts of feedback and oscillators, amplitude and frequency modulation and detection, communication systems. Prerequisite: Electrical Engineering 102 or Physics 132, Electrical Engineering 107, Mathematics 112.

171 *Digital Circuitry and Systems* (3)

Fall—late afternoon.

Introduction to basic concepts of modern digital programmed systems, mathematical foundations and techniques for logical design of digital circuits, electronic design of computer circuits. Prerequisite: Mathematics 112, Electrical Engineering 102 or Physics 132.

172 *Digital Techniques* (3)

Spring—late afternoon.

Continuation of Electrical Engineering 171. Automatic programming techniques, information theory, self-detecting and correcting codes, advanced logical circuit design, electronic design of digital transistor and magnetic-core circuits, memory systems, analog-to-digital techniques, wiring diagrams. Prerequisite: Electrical Engineering 171.

174 *Digital and Analog Computer Laboratory* (2)

Spring—afternoon.

Theory and use of digital and analog computers: programming, operating, logical circuitry, design, troubleshooting. Prerequisite: Electrical Engineering 137, 171. Laboratory fee, \$11.

189-90 *Proseminar in Electrical Engineering* (1-1)

Academic year—late afternoon.

Oral and written presentation of technical and nontechnical papers by students, with group discussion and critical analysis. Prerequisite: senior status.

MECHANICAL ENGINEERING

6 *Engineering Problems** (2)

Summer 1959.

Simple engineering problems in statics, dynamics, energy, heat and electricity. Training in reasoning, engineering analysis, and application of mathematics to engineering problems. Prerequisite: Mechanical Engineering 5, removal of all entrance deficiencies in science and mathematics.

* This course should be completed before the beginning of the sophomore year.

9 Introduction to Engineering (3)

Academic year—morning, afternoon, and evening.

Number systems, computation aids, scientific method, problem solving techniques, use of mathematical tables. Emphasis is placed on the development of sound reasoning and study methods.

10 Graphical Communication (2)

Academic year—afternoon and evening.

Spatial visualization, engineering drawing, schematic diagrams, descriptive geometry. A laboratory course. **Laboratory fee, \$10.**

100 Analytical Kinematics (3)

Spring—morning and evening.

Theoretical study of the motion of constrained and unconstrained rigid bodies. Prerequisite or concurrent registration: Civil Engineering 121, Mathematics 112.

113 Thermodynamics I (3)

Fall—morning and evening.

Theoretical study of fundamental concepts, equations of state, first and second laws of thermodynamics, entropy, single and two-phase mixtures. Prerequisite: Chemistry 12, Mathematics 31, Physics 16.

114 Thermodynamics II (3)

1959-60 and alternate years: spring—morning and evening; 1960-61 and alternate years: spring—evening.

Theoretical study of vapor cycles, combustion, gas dynamics, equilibrium, multiphase mixtures. Prerequisite: Mechanical Engineering 113. Prerequisite or concurrent registration: Civil Engineering 132, Mechanical Engineering 118.

118 Heat Transfer (3)

Spring—morning and evening.

Heat transfer theory, conduction, convection, radiation, field and potential theory applied to conduction. Prerequisite: Mechanical Engineering 113, Mathematics 112.

120 Physical Metallurgy (3)

1959-60 and alternate years: spring—evening; 1960-61 and alternate years: spring—morning.

Physics of metals, crystal and lattice structures, binary and ternary alloys, properties of alloys, nonequilibrium conditions, phase diagrams. Prerequisite: Mathematics 31, Civil Engineering 125.

123 Advanced Dynamics I (3)

1959-60 and alternate years: fall—morning and evening; 1960-61 and alternate years: fall—evening.

Shock and vibrations in linear mechanical systems, electromechanical analogies, transient and steady-state analysis. Prerequisite: Mechanical Engineering 100. Prerequisite or concurrent registration: Civil Engineering 157.

124 Advanced Dynamics II (3)

1959-60 and alternate years: spring—morning and evening; 1960-61 and alternate years: spring—evening.

Advanced study of dynamics of continuous mechanical systems. Lagrange's equations, Hamilton's principle, gyrodynamic. Prerequisite: Mechanical Engineering 123.

135-36 Thermal Power (3-3)

1959-60 and alternate years: academic year—morning and evening; 1960-61 and alternate years: academic year—evening.

Analysis and design principles governing systems and components in heat-power, gas and vapor turbines, internal combustion engines, heat pumps, nuclear power systems. Lecture and laboratory. Laboratory fee, \$15 a semester. Prerequisite: Physics 191; Civil Engineering 132; Mechanical Engineering 114, 118. Prerequisite or concurrent registration: Mechanical Engineering 139.

139 Fluid Machinery (3)

1959-60 and alternate years: fall—morning and evening; 1960-61 and alternate years: fall—evening.

Positive-displacement machines, hydraulic circuits and servomechanisms; general theory of dynamic machines; velocity diagrams and work transfer; radial, axial, and mixed-flow machines; torque converters and couplings; jet machines. Lecture and laboratory. Laboratory fee, \$10. Prerequisite: Civil Engineering 132, Mechanical Engineering 113. Prerequisite or concurrent registration: Mechanical Engineering 123.

143 Production Analysis (3)

1959-60 and alternate years: fall—morning and evening; 1960-61 and alternate years: fall—morning. Principles of programming, quality control, automation, operations analysis. Prerequisite: Mathematics 112.

146 Dynamics of Compressible Fluids (3)

1959-60 and alternate years: spring—morning; 1960-61 and alternate years: spring—evening.

Mathematical theory of compressible fluid flow, flow around immersed bodies, airfoil theory, shock-wave theory, thermodynamics of compressible fluids. Laboratory fee, \$10. Prerequisite: Mechanical Engineering 118, Civil Engineering 132.

GRADUATE COURSES

Prerequisites for graduate courses are not listed explicitly. Instructors in individual courses will state prerequisites, and may recommend preparatory work to be completed prior to admission to the course. (See also page 60.)

ENGINEERING ADMINISTRATION

The School of Engineering offers the following courses primarily for candidates for the degree of Master of Engineering Administration. Other courses listed in this program are offered by the departments of Accounting, Business and Public Administration, Geography, Psychology, and Statistics.

191 *Engineering Law** (3)

Fall—evening; summer 1959.

The influence of contract, property, and tort law upon engineering activities. Legal principles relating to the organization and management of engineering companies and governmental departments; legal procedures of interest to engineers. Topics considered include contracts, agency, partnership, corporations, liens, and expert testimony.

201 *Engineering Administration I* (3)

Fall—evening; spring—evening; summer 1959.

Application of scientific method to the administrative processes of (1) planning and (2) organizing; including development of objectives, key factors in planning, basics of organization, stages of organizational growth, special problems of organization in an engineering or scientific enterprise, and management development.

202 *Engineering Administration II* (3)

Fall—evening; spring—evening; summer 1959.

Continuation of Engineering Administration 201. Application of scientific method to the administrative processes of (3) managing or directing and (4) evaluation and control. Study of delegation; decentralization; personnel relations; systems engineering; automation; financial analysis, budgeting, and administrative audits.

205 *Engineer and Society* (3)

Spring—evening.

Role of the engineer and the engineering profession in society; the influence of humanities in engineering and scientific activities; and the relationship of engineering to the community, state, nation, and the world. Case studies by the student are required.

* An undergraduate course which may be taken for graduate credit with approval of the Committee on Graduate Studies.

206 *Professional Management Development and Personnel Relations* (3)

1960-61: spring—evening.

The meaning, principles, and practices of management development and personnel relations; collective bargaining; principles and practices of personnel administration.

211 *Communication of Ideas* (3)

Fall—evening.

The principles and practices of factual technical communication; reports, administrative memoranda, and articles for publication; the selection of content and preparation of material for readers of different orientations and capabilities.

251 *Management of Research and Development* (3)

Fall—evening.

Management problems involved in the administration of research and development programs; exploration of techniques in programming; selection of organizations for research, maintenance, control, and evaluation of projects. Prerequisite: Engineering Administration 202 or permission of instructor.

252 *Production and Maintenance Management* (3)

Fall—evening; spring—evening.

Managerial implications of automation. Study of skills and abilities essential to industrial management, including maintenance of equipment and real property. Prerequisite: Engineering Administration 202 or permission of instructor.

261 *Economic Analysis in Engineering Planning* (3)

Fall—evening; spring—evening.

Application of economic principles to engineering administration: inputs, outputs, investments, and prices. Studies are made of the methods of analyzing economic factors in evaluating alternate courses of administrative action in government and industry.

263 *Quantitative Techniques of Engineering Administration* (3)

Not offered 1959-60.

Application of the various quantitative techniques, mathematical, statistical, and other management sciences' techniques to the analysis of engineering administration and the solution of administrative problems by the use of models, theories, and measurements.

271 Operations Research (3)

Fall—evening; spring—evening.

Background and application of operations research; history, characteristics, capabilities, administrative considerations, cases, methods, and techniques, including construction of conceptual and mathematical models.

272 Problems in Operations Research (3)

Spring—evening.

Illustrations of the application of operations research by study of case histories; examples of the formulation and preliminary order-of-magnitude case; examples of broader scope. Prerequisite: Engineering Administration 271 or permission of the instructor.

273-74 Techniques of Operations Research (3-3)

Academic year—evening.

Theory and application of techniques used in operations research, including order-of-magnitude estimation, probability and mathematical statistics, symbolic logic, inequality-constrained stationary-value problems, dynamics of populations, Monte Carlo simulation, strategic gaming, and error and sensitivity analysis. Prerequisite: Engineering Administration 271 or permission of the instructor.

290 Problems in Engineering Administration (3)

Fall—evening; spring—evening.

Application of the scientific method to engineering administrative problems; the selection and development of the Master's Problem.

291 Master's Problem (3)

Fall—evening; spring—evening; summer 1959.

Experimentation and proof of the Master's Problem solution. Preparation for presentation of the problem in written form.

295 Applied Research in Engineering Administration (arr.)

Fall—as arranged; spring—as arranged.

Application of established principles to new engineering administrative situations; the development of new knowledge of administration.

296 Research in Engineering Administration (arr.)

Fall—as arranged; spring—as arranged.

Creative thinking in engineering administration, initiation of new theories and principles, development of new hypotheses, experimentation, proof of theories and hypotheses.

ENGINEERING SCIENCE

The following courses serve as foundations for specialization, since they are concerned with a body of knowledge applicable in a variety of engineering fields.

154 Automatic Control* (4)

Spring—morning and evening.

Theory of automatic control systems including electromechanical, pneumatic, and hydraulic systems. Transient analysis, transfer functions, stability criteria. Experimental study of automatic control systems. Laboratory fee, \$11. Prerequisites: Electrical Engineering 127 or Mechanical Engineering 123.

201 Automatic Control (3)

Fall—evening.

Advanced theory of automatic control. Systems analysis, multiple-loop systems, nonlinear systems.

203 Operational Analysis of Linear Systems (3)

Fall—evening.

Transient analysis of linear, lumped-parameter electrical and mechanical systems by operational methods with emphasis on Laplace transforms.

211 Analysis of Engineering Systems I (3)

Fall—evening; spring—evening.

Application of mathematical principles to physical systems in civil, electrical, and mechanical engineering. Mathematical methods are emphasized. Mathematical topics include: partial differential equations and boundary-value problems; Fourier series, integral, and transform; coordinate systems, orthogonal functions.

212 Analysis of Engineering Systems II (3)

Spring—evening.

Continuation of Engineering Science 211. Mathematical topics include: functions of complex variables, operational and transform methods, numerical solutions of differential equations, finite differences, matrices.

217 Analytical Mechanics (3)

Fall—evening; spring—evening.

Fundamental principles, generalized coordinates, variational principles and Lagrange's equations, nonholonomic systems, Hamilton's equations, theory of small oscillations.

* An undergraduate course which may be taken for graduate credit with the approval of the Committee on Graduate Studies.

220 Nonlinear Mechanics (3)

Spring—evening.

Topological and analytical methods in nonlinear mechanics, nonlinear resonance, relaxation oscillations.

221 Theory of Elasticity (3)

Fall—evening.

Stress and strain at a point; differential equations of equilibrium; boundary conditions, compatibility equations, and stress functions; two-dimensional problems in rectangular and curvilinear coordinates; strain energy methods; elementary three-dimensional problems; torsion and bending of prismatic bars; thermal stress.

231 Fluid Dynamics (3)

Fall—evening.

Theory of compressible and incompressible fluid motion including: potential motion, circulation and vorticity, mathematical treatment of flow at sub-, trans-, and supersonic velocities, normal and oblique shock, and elements of heat transfer.

299-300 Master's Problem (3-3)

Academic year—as arranged; summer 1959.

CIVIL ENGINEERING**224 Plates and Shells (3)**

1960-61 and alternate years: spring—evening.

Pure bending of flat plates, laterally loaded flat plates, flat rectangular plates with various edge conditions, bending of flat plates under combined lateral and transverse loads, curved shells.

226 Plasticity of Solids (3)

1959-60 and alternate years: fall—evening.

Plastic flow and fracture of solids; theory of perfectly plastic solids, including basic concepts, plastic deformation of simple trusses and beams, and plane strain problems; theory of fracture.

251 Theory of Structures (3)

Spring—evening.

Classical and modern methods of structural analysis; basic theory of plane structures; statically indeterminate structures, including continuous beams and trusses and arches; limit-load analysis; special problems.

252 *Space Structures* (3)

1960-61 and alternate years: fall—evening.

Theory of structures in three dimensions: trusses, rigid frames, and thin-shell structures.

256 *Theory of Elastic Stability* (3)

Not offered 1959-60.

Beam-column problems and methods of analysis (including numerical analysis); lateral buckling of beams; buckling of rigid frames, flat plates, stiffened flat plates, and shells; the pony truss; buckling of arches.

ELECTRICAL ENGINEERING

205 *Electronic Circuit Analysis* (3)

Spring—evening.

Methods of linear and nonlinear analysis applied to passive and active networks including vacuum-tube and transistor circuits, and magnetic and dielectric amplifiers.

207 *Steady-state Network Analysis* (3)

Spring—evening.

Analysis of lumped, linear networks: determinants, loop and node analysis, network theorems, four-terminal networks, filters, complex frequency, network functions, and general network properties.

209 *Electromagnetic Field Analysis* (3)

Fall—evening.

Electrostatics, magnetics, and Maxwell's equations; solutions of Laplace's equation, retarded potentials, electromagnetic waves in bounded media, field analysis techniques

211 *Physical Electronics* (3)

Fall—evening.

Physical principles underlying operation of various electronic devices including vacuum tubes, electron lenses, transistors, and recent solid-state electronic devices

215 *Analysis of Modulation and Noise* (3)

Spring—evening.

Analysis by Fourier series and integrals of signals and linear networks, modulation and spectra, noise analysis including probability method of determining power spectra.

231 Basic Concepts of Digital Computers (3)

Spring—evening.

The programmed system, logical and system design of digital computers, special-purpose digital computers, theory of switching circuits and computer logic, reliability, digital electronic circuits, modern developments.

MECHANICAL ENGINEERING**211 Thermodynamics (3)**

Fall—evening.

Reversible and irreversible processes, equilibrium, ideal and van der Waal's gases, dilute solutions, phase equilibria, electric and magnetic effects, radiation. Introduction to kinetic theory and statistical mechanics.

213 Heat Transfer (3)

Spring—evening.

Physical and mathematical concepts of heat transfer phenomena under steady and unsteady conditions, including: Stefan-Boltzmann and Planck laws for radiation. Fourier heat equation for conduction, dimensional analysis, and boundary layer theory for convection.

215 Gas Dynamics (3)

Spring—evening.

Theory of gas dynamics including: combustion, shock phenomena, dynamics of flow, and heat transfer for high temperature gases.

233 Supersonic Flow and Shock Waves (3)

Not offered 1959-60.

Advanced theory of supersonic fluid flow. Shock phenomena, spherical waves.

**REQUIRED AND ELECTIVE COURSES FROM
OTHER DEPARTMENTS**

On the following pages appears a list of courses, offered in other departments of instruction, which are required in one or more of the engineering curricula.

Courses in the options of the Bachelor of Science in Engineering curriculum are to be selected from the offerings of the department of option with the approval of the executive officer of the department. A complete listing of courses in these departments appears in the general catalogue of the University.

Required elective courses in the humanities and social studies may be selected from the offerings of the following departments of instruction:

Art	Religion
Classical Languages and Literatures	Romance Languages and Literatures
English:	Slavic Languages and Literatures
American Literature	Economics
English Literature	Geography
Germanic Languages and Literatures	History
Philosophy	Political Science
	Sociology and Anthropology

Courses offered in these departments are described in the general catalogue of the University.

Electives (other than required electives in the humanities and social studies) taken to fulfill the 140 semester hour degree requirement need not be confined to the above list, but credit is not given for courses in Physical Education or Secretarial Studies.

ACCOUNTING

1-2 *Introductory Accounting* (3-3)

Basic principles and procedures underlying accounting records, preparation of work sheets and financial statements, introduction to cost accounting and valuation, and income determination problems. Prerequisite to Accounting 2: Accounting 1 or permission of the instructor.

3 *General Accounting* (3)

Study of accounting systems used by single proprietorships and corporations, with emphasis on accounting theory, terminology, and the analysis and interpretation of accounting data. Designed for those who need only a survey of accounting.

211-12 *Managerial Accounting* (3-3)

First half: analysis of the accounting system with special reference to the use of financial and operating records and accounting reports as tools of management; a study of valuation and income determination problems including the influence of price level changes on accounting data. Prerequisite: Accounting 1-2 or 3. *Second half:* a survey of internal accounting controls, commercial budgets, and cost accounting systems used by management in directing and controlling a business. Prerequisite to Accounting 212: Accounting 211 or permission of the instructor.

293 *Budget Preparation and Control* (3)

Principles, techniques, and procedures involved in the development, installation, and operation of a system of budgetary control to aid in the management of commercial, industrial, and government organizations. Prerequisite: Accounting 212.

AIR SCIENCE

BASIC COURSE

1-2 Leadership Laboratory—Freshman Year (1-1)

Cadet basic airman training. Military courtesy, discipline, appearance and bearing; element, flight, squadron, and mass formation drills, parades and ceremonies. Minimum 15 hours a semester. Dry-cleaning fee, charged one time a year, \$3. (May be substituted for Physical Education 1-2.)

11-12 Leadership Laboratory—Sophomore Year (1-1)

Cadet noncommissioned officer training. Military bearing and courtesy, all phases of drills and ceremonies, command voice training and command responsibility. Prerequisite: Air Science 1-2 and Air Science 21-22 for men and Air Science 1-2 for women. Minimum 15 hours a semester. Dry-cleaning fee, charged one time a year, \$3. (May be substituted for Physical Education 11-12.)

21-22 Air Science I—Freshman Year (2-2)

Foundation of air power. A general survey of air power designed to provide the student with an understanding of the elements of air power and basic aeronautical science.

51-52 Air Science II—Sophomore Year (2-2)

Careers in the United States Air Force; elements of aerial warfare: targets, weapons, aircraft, bases, and operations. Prerequisite: Air Science 21-22 or equivalent active military training.

ADVANCED COURSE

101-2 Air Science III—Junior Year (3-3)

The Air Force Commander and his Staff, creative problem solving, communicating in the Air Force, instructing in the Air Force, military justice, air navigation, weather, Air Force base functions. Selection by a board of University and Air Force officials is required.

**103-4 Leadership Laboratory—Junior Year
(Credit is a part of Air Science 101-2)**

Cadet noncommissioned officer and officer training. Wearing of the uniform, parades and ceremonies, commands and command voice. Cadets perform duties involving planning for and supervision of Cadet Corp activities. Emphasis placed on leadership and management proficiency. Minimum 15 hours a semester.

**105 Summer Training Unit—Between Junior and Senior
Years (required)**

Attendance at a four-week Air Force ROTC summer training unit at an Air Force base within continental United States is mandatory.

Program consists of familiarization flying, physical training, individual weapons, Air Force base activity and equipment, field exercises, air base problems, and leadership training.

151-52 *Air Science IV—Senior Year (3-3)*

Leadership and management seminar; military aviation and the evolution of warfare; military aspects of world political geography; briefing for commissioned service.

153-54 *Leadership Laboratory—Senior Year*
(Credit is a part of Air Science 151-52)

Cadet officer training. Cadet officers conduct activities of Corps of Cadets through chain of command, instruct subordinates, plan and supervise Cadet Corps training and administration. Preparation for commissioned officer duties. Development of leadership and managerial responsibilities. Minimum 15 hours per semester.

BUSINESS AND PUBLIC ADMINISTRATION

BUSINESS ADMINISTRATION

250 *Contract Administration (3)*

Primarily for students in the Engineering Administration program. The administration, negotiation, and renegotiation of contracts between the government and industry for engineering, scientific, and other professional services, facilities, and materials. Contract policies, fixed-price and cost-plus-fixed-fee, bidding, etc.

PUBLIC ADMINISTRATION

213 *Administration in Government (3)*

The background of public administration, particularly federal; its organization framework, and the place of the executive and middle management in the administration of public policy. Review and discussion of administrative thought, concepts, principles, and techniques with practical problems and cases from federal government.

CHEMISTRY

11-12 *General Chemistry (4-4)*

Prerequisite: one year of high school algebra. Laboratory fee, \$18 a semester. Lecture, laboratory, and recitation. This is a full-year course. Credit is not given for the first half until the second half is completed.

ECONOMICS

1 *Principles of Economics (3)*

Survey of the major economic principles, institutions, and problems in contemporary life.

ENGLISH COMPOSITION

A English Practice (3)

Instruction, drill, and exercises in grammar, vocabulary, spelling, and mechanics in general; instruction and exercises in composition and reading. This course is designed to prepare students for English 1.

B English for Foreign Students (3)

A course in reading and writing designed to prepare the student for English 1. Special attention is given to spelling, syntax, grammar, idiom, and vocabulary.

1 English Composition* (3)

Review of grammar, exercises in composition, readings.

2 English Composition* (3)

Exercises in composition, readings. The second half of the six-hour English Composition course required of all students.

GEOGRAPHY

271 Engineering Geography (3)

Primarily for students in the Master of Engineering Administration program. Selection, synthesis, and application of regional, physical, political, economic, and social characteristics as they relate to the planning, construction, and operation of engineering works in both the United States and foreign countries, illustrated by reference to a limited number of regions and problems through the case study.

MATHEMATICS

3 College Algebra (3)

Exponents and logarithms; linear equations; complex numbers; quadratic equations; introduction to theory of equations; mathematical induction and the binomial theorem; permutations, combinations, and probability; determinants; progressions. Prerequisite: one year each of high school algebra and high school geometry.

6 Plane Trigonometry (3)

Prerequisite: two years of high school algebra and one year of high school geometry or Mathematics 3 (or concurrent registration therefor).

* Before students are registered in English 1, they are tested in the minimum essentials of vocabulary, spelling, grammar, standard usage, and writing skill. Those students who show marked superiority may, upon passing further tests, be exempted from one or both halves of the English Composition course; those who are inadequately prepared for English 1 will be assigned to English A. English 1 is prerequisite to all other courses in English.

12 *Analytic Geometry* (3)

Prerequisite: Mathematics 3 and 6, or two years of high school algebra, one year of high school geometry, and one-half year of high school trigonometry.

29 *Calculus I* (3)

Differentiation and integration of polynomial functions, with applications. Prerequisite or concurrent registration: Mathematics 12.

30 *Calculus II* (3)

Differentiation and integration of transcendental functions, with applications; the mean value theorem and applications. Prerequisite: Mathematics 12, 29.

31 *Calculus III* (3)

Infinite series, solid analytic geometry, partial differentiation, multiple integrals, introduction to vector concepts, improper integrals. Prerequisite or concurrent registration: Mathematics 30.

111 *Mathematics for Engineers and Physicists I* (3)

Differential equations, vector analysis, introduction to matrix algebra. Prerequisite: Mathematics 30, 31.

112 *Mathematics for Engineers and Physicists II* (3)

Topics from advanced calculus, partial differential equations, and complex variables. Prerequisite: Mathematics 111 or 112.

PHYSICAL EDUCATION

1-2 *Freshman Physical Education* (1-1)

Two periods of supervised activity a week. Locker and towel fee, \$4.50 a semester.

11-12 *Sophomore Physical Education* (1-1)

Two periods of supervised activity a week. Locker and towel fee, \$4.50 a semester.

PHYSICS

11 *Introductory Physics* (3)

Light, heat, force, energy, and the properties of matter. Prerequisite: high school algebra and plane geometry. Material fee, \$11. Lecture, laboratory, and recitation.

14 *General Physics* (3)

Mechanics, wave-motion, and sound. Prerequisite: Physics 11. Mathematics 29. Prerequisite or concurrent registration: Mathematics 29. Material fee, \$11. Lecture, laboratory, and recitation.

15 General Physics (3)

Electricity and magnetism. Prerequisite: Physics 14, Mathematics 30. Material fee, \$11. Lecture, laboratory, and recitation.

16 General Physics (3)

Electromagnetic waves, atomic and molecular structure, radioactivity, nuclear physics, quantum theory of matter and radiation, the elementary particles. Prerequisite: Physics 15.

116 Quantum and Solid State Physics (3)

Primarily for engineers. Prerequisite: Physics 16, Mathematics 111.

191 Nuclear Reactors (3)

Neutron physics: sources of neutrons, neutron reactions, slowing down and diffusion; introduction to transport theory; fission process; reactor types; basic theory of homogeneous and heterogeneous reactors, including specific numerical studies from recent publications. Prerequisite: Physics 16, Mathematics 31.

PSYCHOLOGY**145 Principles of Human Relations (3)**

Primarily for students in the Engineering Administration program. Survey of the psychological principles involved in dealing with individuals and groups.

146 Problems in Human Relations (3)

The application of psychological principles to understanding and improving personal and group relations. Emphasis will be upon case studies and specific problems drawn from life situations, with important attention to supervisory and administrative relationships. Prerequisite: Psychology 1 (or Psychology 145 for students in the Engineering Administration program).

STATISTICS**51 Introduction to Business and Economic Statistics (3)**

Survey of elementary principles and procedures for presenting, analyzing, and interpreting statistical data; consideration of characteristic values; measures of variability, sampling processes, index numbers, time series analysis, and sampling correlation. Prerequisite: one entrance unit in algebra. Laboratory fee, \$9.

262 Managerial Statistics and Quality Control (3)

Primarily for students in the Engineering Administration program. The application of statistical principles and practices to management and quality control. Emphasis is placed on the use of statistical techniques in making management decisions, controlling quality, and standardization.

271-72 *Statistical Information Theory* (3-3)

A year course: credit is not given for the first half until the second half is completed. Basic concepts, definitions, and formulas of information theory; their significance and general properties. Shannon's coding theorem, channel capacity, and transmission of information; inequalities of information theory and sufficiency; applications to statistical problems of discrimination and hypothesis testing; asymptotic distribution theory of information; analysis of contingency tables; loss of information due to grouping and sequential analysis; comparison of experiments.

ALUMNI AND ALLIED ASSOCIATIONS

THE GENERAL ALUMNI ASSOCIATION

The objects of this Association are to unite the graduates in closer sympathy and to promote the general welfare of the University. The following persons are eligible for *active* membership: graduates of any college, school, or division of the University; holders of honorary degrees from the University; and members of the Board of Trustees and of the Faculty of the University. Any person who has matriculated, who has been in regular attendance for one year, and who has left the University in good standing, is eligible for *associate* membership.

The University, in June 1958, provided new quarters for the Office of Alumni Relations in Bacon Hall, 2000 H Street NW., Washington D. C. The General Alumni Association completed furnishing a reception room in November 1958 dedicated to the use of alumni and alumni organizations.

All Alumni are urged to keep the office informed of *changes of address or occupation* and to supply information with regard to their fellow alumni.

THE ENGINEER ALUMNI ASSOCIATION OF THE GEORGE WASHINGTON UNIVERSITY

The Engineer Alumni Association was organized in 1936 and has been affiliated with the General Alumni Association since that time. Its objects are to unite the graduates and Faculty of the School of Engineering in closer fellowship, to promote the general welfare of the School of Engineering and of the University at large, to foster activities of the engineering organizations recognized by the University, and to advance the profession of engineering in general.

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THE PHOTOLASTIC POLARISCOPE—FOR ENGINEERING RESEARCH



CLASS BREAK, TOMPKINS HALL OF ENGINEERING

ELECTRONICS—AN ESSENTIAL IN MODERN ENGINEERING



THE SCHOOL OF EDUCATION

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CALENDAR OF THE SCHOOL OF EDUCATION

1959-60

Date	Day	Occasion
1959 FALL SEMESTER: Sept. 10	Thursday	Orientation Assembly for all new students
Sept. 11 and 14	Friday and Monday	Curriculum assemblies*
Sept. 15	Tuesday	Placement tests for colleges and schools other than the School of Engineering
Sept. 17-19	Thursday through Saturday morning	Registration
Sept. 21	Monday	Classes begin
Oct. 2	Friday	Thesis subjects of February Master's candidates due to be filed in the Office of the School of Education
Oct. 9	Friday	Dissertation subjects of June Doctoral candidates due in the Office of the School of Education
Oct. 17	Saturday	Fall Convocation
Oct. 23	Friday	Bachelor of Arts activities plans due
Nov. 7	Saturday	Applications for Doctoral November comprehensive examinations due
Nov. 11	Wednesday	Veterans Day. Holiday
Nov. 13	Friday	Meeting of Committee on Graduate Studies
Nov. 21	Saturday	Comprehensive examinations for Doctoral candidates
Nov. 26-28	Thursday through Saturday	Thanksgiving recess
Nov. 28	Saturday	Applications for Doctoral and Master's January comprehensive examinations due
Dec. 21-Jan. 2	Monday through Saturday	Christmas recess
1960 Jan. 4	Monday	Classes begin
Jan. 9	Saturday	Theses of Master's candidates due Dissertations of February Doctoral candidates due Comprehensive examinations for Doctoral and Master's candidates

* All new students are expected to attend one Curriculum Assembly

CALENDAR OF THE SCHOOL OF EDUCATION—Continued

Date	Day	Occasion
Jan. 13	Wednesday	Last day of classes for the fall semester
Jan. 15	Friday	Meeting of Committee on Graduate Studies
Jan. 18-26	Monday through Tuesday	Examination period
SPRING SEMESTER		
Jan. 28-30	Thursday through Saturday morning ..	Registration
Feb. 1	Monday	Classes resume for the spring semester
Feb. 12	Friday	Thesis subjects for June Master's candidates due to be filed in the Office of the School of Education
Feb. 22	Monday	Winter Convocation. Holiday
March 1	Monday	Activities plans due from Bachelor of Arts candidates entering the School of Education in February
March 5	Saturday	Dissertation subjects of October Doctoral candidates due to be filed in the Office of the School of Education
April 1	Friday	Applications for scholarships for 1960-61 should be filed
April 8	Friday	Dissertation subjects for February 1961 Doctoral candidates due to be filed in the Office of the School of Education
April 9	Saturday	Applications for Doctoral and Master's April comprehensive examinations due
April 15-20	Friday through Wednesday	Dissertations of June Doctoral candidates due
April 30	Saturday	Easter recess
May 6	Friday	Comprehensive examinations for Doctoral and Master's candidates
May 11	Wednesday	Meeting of Committee on Graduate Studies
May 16-24	Monday through Tuesday	Last day of classes for the spring semester
May 29	Sunday	Examination period
June 1	Wednesday	Baccalaureate Commencement

CALENDAR OF THE SCHOOL OF EDUCATION—Continued

Date	Day	Occasion
SUMMER SESSIONS		
June 13	Monday	Registration and first day of classes of the pre-session and twelve-week session
June 14	Tuesday	Registration for the eight-week term
July 1	Friday	Classes begin for the eight-week term
July 4	Monday	Pre-session ends
July 5	Tuesday	Independence Day. Holiday
July 13	Wednesday	Registration and the first day of classes of the six-week session
July 25	Monday	Applications for Doctoral and Master's July comprehensive examinations due
July 27	Wednesday	Registration and first day of classes of second half of six-week and twelve-week sessions
Aug. 5	Friday	Comprehensive examinations for Doctoral and Master's candidates
Aug. 12	Friday	Eight-week term ends
Aug. 15	Monday	Six-week session ends
Sept. 2	Friday	Dissertations of October Doctoral candidates due in the Office of the School of Education
Sept. 22-24	Thursday through Saturday morning	Registration and first day of classes of the post-session
		Post-session ends
		Registration for the fall semester of the academic year 1960-61

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The Board of Trustees of the University is composed of the President of the University ex officio and the following persons by election:

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Claud Max Farrington, A.M., *Assistant to the President*

Harold Griffith Sutton, M.S., *Director of Admissions*

Frederick Russell Houser, A.M. in Govt., *Registrar; Secretary of the Faculties*

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Don Carlos Faith, Ph.D., *Director of Activities for Men; Director of Veterans Education*

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Alan Thomas Deibert, A.M., *Adviser to Students from Foreign Countries*

Richard Bernard Castell, A.B., M.D., *Director of Health Administration*

Ruth Harriet Atwell, A.M., *Director of Women's Athletics*

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John Francis Latimer, Ph.D., *Assistant Dean of Faculties; University Marshal*

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THE FACULTY AND STAFF OF INSTRUCTION*

James Harold Fox, A.M., Ed.D., *Dean of the School of Education*
Blake Smith Root, A.M., Ed.D., *Assistant Dean of the School of Education*

Ruth Harriet Atwell, A.M., *Professor of Physical Education for Women*
Mitchell Dreese, Ph.D., *Professor of Educational Psychology*
James Harold Fox, A.M., Ed.D., *Professor of Education*
Thelma Hunt, Ph.D., M.D., *Professor of Psychology*
Frances Kirkpatrick, A.M., *Professor of Home Economics*
William Henry Myers, A.M., *Professor of Physical Education for Men*
Burnice Herman Jarman, A.M., Ed.D., *Professor of Education*
Chester Elwood Leese, Ph.D., *Fry Professor of Physiology*
Helen Bennett Lawrence, A.M., *Professor of Physical Education for Women*

Blake Smith Root, A.M., Ed.D., *Professor of Education*

† Joseph Henry Krupa, M.S., Ed.D., *Professor of Physical Education for Men*

Calvin Weir Pettit, Ph.D., *Professor of Speech*
Kathryn Mildred Towne, A.M., *Professor of Home Economics*
‡ Elizabeth Burtner, A.M., *Professor of Physical Education for Women*
Anthony Charles LaBue, B.S., Ed.D., *Professor of Education*
Don Carlos Faith, Ph.D., *Professor of Educational Psychology*
Grover LaMarr Angel, A.M., Ed.D., *Professor of Education*
Ray LaForest Hamon, Ph.D., *Professorial Lecturer in Education*
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Anthony Marinaccio, Ph.D., *Professorial Lecturer in Education*
Clayton Hutchins, Ph.D., *Professorial Lecturer in Education*

* The President of the University, the Dean of Faculties of the University, the Dean of the School, the Registrar of the University, the Director of Admissions of the University, Professors, Associate Professors, and Assistant Professors constitute the Faculty.

† On sabbatical leave fall semester 1959-60.

‡ On sabbatical leave spring semester 1959-60.

- Kenneth Brown, Ph.D., *Professorial Lecturer in Education*
 John Holden, Ph.D., *Professorial Lecturer in Education*
 Charles Koelsche, M.S., Ed.D., *Professorial Lecturer in Education*
 Barnard DeJean Joy, A.M., Ed.D., *Professorial Lecturer in Education*
 Raymond George Hanken, B.S. in P.E., A.M. in Ed., *Associate Professor of Physical Education for Men*
 Mildred Hollander Shott, A.M., *Associate Professor of Secretarial Studies*
 Vincent James DeAngelis, B.S. in P.E., A.M. in Ed., *Associate Professor of Physical Education for Men*
 John Carl Lang, A.M., Ed.D., *Associate Professorial Lecturer in Education*
 LuVerne Crabtree Walker, A.M., *Associate Professorial Lecturer in Education*
 Raymond Ray Reed, A.M., *Associate Professorial Lecturer in Education*
 Eugenia Campbell Nowlin, A.M., *Associate Professorial Lecturer in Education*
 Gladys Gardner Jenkins, A.M., *Associate Professorial Lecturer in Education*
 Mary Ellen Coleman, A.M., *Associate Professor of Education; Director of the Reading Clinic*
 Eva Mayne Johnson, Ph.D., *Assistant Professor of Psychology*
 Carol Ruth St. Cyr, Ph.D., *Assistant Professor of Education*
 William Andrew McCauley, Ph.D., *Assistant Professor of Education*
 Harry Grubb Detwiler, A.M., *Assistant Professor of Education*
 Loretta May Stallings, A.M., *Assistant Professor of Physical Education for Women*
 Robert Edward Baker, A.M., A.M. in Ed., *Assistant Professor of Education*
 Gay Ellen Cheney, B.S. in Ed., *Assistant Professor of Physical Education for Women*
 Lyndale Harpster George, A.M., *Assistant Professor of Physical Education for Women*
 Levin Bartow Hanigan, B.S., Ed.D., *Lecturer in Education*
 Pat Abernethy, A.B., *Lecturer in Physical Education for Women*
 John Giancaspro, A.M. in Ed., *Lecturer in Education*
 Beverly Anderson Crump, B.S., Ed.M., *Lecturer in Education*
 Zella Mills Huse, A.M., *Lecturer in Education*
 James Whitley Suber, A.M., Ed.D., *Lecturer in Education*
 James Walter Tyler, A.M., Ed.D., *Lecturer in Education*
 Ward Whipple, A.M., *Lecturer in Education*
 Hazel Emma Wilson, A.M., *Lecturer in Education*

CONSULTANT IN RESEARCH

Wesley Earl Armstrong, M.S., Ed.D., *Director, National Council for Accreditation of Teacher Education*

FIELD STUDIES

Jerry Augbern Rice, Jr., M.S., *Director of Field Studies*

Field Service Coordinators

Alexander Anderson, A.M., *Assistant Principal, Washington-Lee High School, Arlington, Virginia*

Mary Foust Maré, A.M., *Assistant Principal and Dean of Girls, Wakefield High School, Arlington, Virginia*

Claude Manby Richmond, B.S., A.M. in Ed., *Principal, Stratford Junior High School, Arlington, Virginia*

COMMITTEES*

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1960

Elizabeth Burtner

Vincent James DeAngelis

1961

Frances Kirkpatrick

Harry Grubb Detwiler

1962

William Andrew McCauley
Robert Edward Baker

COMMITTEE ON GRADUATE STUDIES

The Dean of the School, *Chairman*

Mitchell Dreese

Burnice Herman Jarman

Blake Smith Root

Grover LaMarr Angel

Thelma Hunt

Don Carlos Faith

Anthony Charles LaBue

Carol Ruth St. Cyr

William Andrew McCauley

COMMITTEE ON ADMISSION AND ADVANCED STANDING

The Dean of the School, *Chairman*

Ruth Harriet Atwell

Frances Kirkpatrick

Harold Griffith Sutton

Blake Smith Root

Joseph Henry Krupa

COMMITTEE ON SCHOLARSHIP

Blake Smith Root, *Chairman*

Helen Bennett Lawrence

Vincent James DeAngelis

Kathryn Mildred Towne

* The Dean and Assistant Dean of the School of Education are members *ex officio* of all committees.

† Elected by the Faculty.

GENERAL INFORMATION

INTRODUCTORY

It is the purpose of the School of Education to prepare teachers, counselors, and administrators for the higher ranges of educational service and to offer opportunities to teachers of experience to extend their education. The School includes the departments of Education, Physical Education, and Home Economics.* It offers both graduate and undergraduate work. Other departments of the University provide general education and subject-matter courses needed for a well-balanced program of teacher education.

Special curricula are provided for liberal arts graduates, housewives, and retired military personnel who wish to prepare for teaching. The School also provides a wide range of courses of interest to emergency teachers who wish to qualify for teaching certificates and teachers who wish to renew licenses.

Laboratory and clinical facilities are provided by the University Reading and Speech clinics. In cooperation with public and private schools and a wide variety of social agencies, ample opportunity for field experience is provided.

The schedule of courses is arranged to meet the convenience of both full-time and part-time students. By attending evening, Saturday, and summer classes, teachers in the schools of the metropolitan Washington area and others within commuting range may complete all the requirements for a degree without giving up their positions.

HISTORICAL DEVELOPMENT

The University began offering professional courses for teachers in 1904-5 and in 1907 it established a Division of Education. In 1909, the Division of Education became the Teachers College which, in its early years, was concerned largely with teacher preparation on the undergraduate level.

In 1928, the Teachers College became the School of Education and greater provision was made for advanced study. Since that time the graduate enrollment has steadily increased with the result that today the School has a considerably larger number of graduate than undergraduate students.

ADVANTAGES OF STUDY IN THE NATION'S CAPITAL

Washington is rich in the resources needed by teachers, counselors, and administrators to supplement classroom instruction. In addition to the library facilities of the University, the Library of Congress, the Library of the Department of Home Economics offers a curriculum in home-making. Its program is

of the Department of Health, Education, and Welfare, and many special collections provide unexcelled opportunities for reading and research. The operation of all branches of the National Government may be observed. Among the art galleries are the National Gallery of Art, the Corcoran Gallery of Art, the Freer Art Gallery, Phillips Memorial Gallery, and the National Museum. The music calendar of Washington is a full one, and includes concerts by the National Symphony Orchestra, Philadelphia Orchestra, and the Boston Symphony Orchestra. Those interested in science find many resources for study at the National Museum, the National Zoological Park, the United States Botanic Garden, and the Aquarium of the Fish and Wildlife Service, Department of the Interior. Students have unique opportunities to become acquainted with the work of the Office of Education, the National Education Association, the American Council on Education, and many other national organizations with headquarters in Washington.

ACADEMIC STATUS

The George Washington University is accredited by the regional accrediting agency, the Middle States Association of Colleges and Secondary Schools. This is important to students who wish to transfer credits from one institution to another.

The University is on the approved list of the American Association of University Women and is a member of the College Entrance Examination Board.

The School of Education is accredited by the National Council for Accreditation of Teacher Education, is a member of the American Association of Colleges for Teacher Education, and was a charter member of the National Association of Colleges and Departments of Education prior to the merger of that association with others to form the American Association of Colleges for Teacher Education.

THE EDUCATION OF TEACHERS

Programs of study for the education of teachers are based upon the assumption that every teacher should have a broad general education, adequate mastery of the content of instruction, and professional competence.

The relative emphases placed upon each of these aspects of the total education of teachers varies in accordance with the purposes of each program. For instance, elementary school teachers, since they teach all subjects, require content preparation of greater breadth and less specialization than secondary school teachers.

It is the view of the School of Education that an acceptable minimum education for teaching requires not less than four years of full-time study or the equivalent part-time study. For superior preparation teachers are urged to plan for five years of full-time study or the equivalent part-time study.

The student may choose any one of the following three plans to achieve superior educational preparation for teaching:

1. Upon receiving the Bachelor's degree, he may take a teaching position and, after acquiring some professional experience, return to the School for graduate study leading to the Master's degree. This plan enables students with Bachelor's degrees to start earning immediately and, by teaching experience, to illuminate graduate study which will follow. However, by delaying acquisition of the Master's degree the student cannot command the higher salary usually associated with this degree and may prejudice his opportunity for promotion.

2. The student may choose to pursue full-time graduate study leading to the Master's degree immediately after receiving the Bachelor's degree. This plan is of advantage to students who wish to defer the decision to seek a Master's degree until completion of the undergraduate program and to students transferring from other institutions, whose transferred credits fit more readily into this plan than into the five-year plan discussed below. Both this program and the five-year program enable the student to command a higher beginning salary and be considered for early promotion.

3. For those whose professional aims are established at the beginning of the junior year, the School offers a five-year integrated program of study leading to the Bachelor's and Master's degrees conferred simultaneously. This program permits careful planning from the outset to meet the demands of the teaching position for which the student is preparing; it permits adequate mastery of the content of instruction in two teaching fields; and advances the professional sequence of courses to the

fourth and fifth years, thus providing a more adequate academic preparation. Students are advised to choose the five-year program if possible.

The first two years of all programs of study are administered by the Junior College of the University. During these two college years the student is encouraged to follow the curriculum designed to prepare him for the program of studies he wishes to pursue later in the School of Education. Students who have followed other Junior College curricula may be admitted to the School of Education with deficiencies which they must make up before graduation. A member of the Faculty of the School of Education serves as adviser to students enrolled in each Junior College pre-Education curriculum. At each registration students must have their programs approved by their advisers. They are also urged to seek counsel in the budgeting of time for the inclusion of nonacademic student activities and off-campus cultural opportunities for the development of a well-rounded personality.

THE BACHELOR'S DEGREES

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION FOR MEN

There are three curricula leading to this degree. The Single-Major and Subject-Certification Teacher's Curriculum is designed to prepare students for teaching positions in smaller schools where it is necessary to teach an academic subject in addition to physical education. The Single-Major Teacher's Curriculum prepares for the teaching of physical education in the larger schools. The Physical Education and Recreation Curriculum has been planned for those who wish to be prepared to direct programs of recreation in addition to the teaching of physical education.

PREREQUISITE

The following two-year curriculum offered in the Junior College, is required for admission to the School of Education as a candidate for the degree of Bachelor of Science in Physical Education for Men.

	Semester Hours
English	4
Physical Education	6 or 8
Science	4
Social Studies	6
English 1, 2	6 or 8
Biology 1-2 or Zoology 1-2 (Freshman year)	6
History 30-40, 71-72; Political Science 1 and 9, 1 and 1a or 9-1a, or Sociology and Anthropology 1-2 (Freshman year)	6
Economics, History, or Political Science (Sophomore year)	6

	Semester Hours
Major Prerequisites..Physical Education 43-44, 47; Speech I or II (Fresh- man year)	9
Physical Education 45-46, 49, 50, 58; Psychology I, 22 (Sophomore year).....	18
Elective	7-9
Total.....	64

The minimum requirements for this degree are 66 semester hours, distributed as follows:

Single-Major and Subject-Certification Teacher's Curriculum

The minimum requirements for this degree are 21 semester hours in education, 24 hours in physical education, 18 hours in an academic teaching field, and 3 hours in physiology, distributed as follows:

JUNIOR YEAR		SENIOR YEAR	
	Semester Hours		Semester Hours
Human Development, Learning, and Teaching	6	Common Teaching Skills in Sec- ondary Schools	3
Society and the School	6	Observation and Student Teach- ing in Secondary Schools	6-9
History and Principles of Physi- cal Education	3	Methods and Materials for Teach- ing Team Sports in Secondary Schools	4
Adapted Physical Education and Physical Examinations	3	Methods and Materials for Health Education	3
Techniques for Teaching Recrea- tional Dance	1	Tests and Measurements in Phys- ical Education	3
Methods and Practice in Teaching Physical Education Activities	4	Organization and Administration of Physical Education	3
Physiology	3	Academic teaching field	11
Academic teaching field	7		
Total.....	33	Total.....	33

Single-Major Teacher's Curriculum

The minimum requirements for this degree are 21 semester hours in education, 28 hours in physical education, 3 hours in physiology, and 14 hours of electives:

JUNIOR YEAR		SENIOR YEAR	
	Semester Hours		Semester Hours
Human Development, Learning, and Teaching	6	Common Teaching Skills in Sec- ondary Schools	3
Society and the School	6	Observation and Student Teach- ing in Secondary Schools	6
History and Principles of Physi- cal Education	3	Adapted Physical Education and Physical Examinations	3
Techniques for Teaching Recrea- tional Dance	1	Methods and Materials for Health Education	3
Methods and Practice in the Instructional Program	4	Tests and Measurements in Phys- ical Education	3

	Semester Hours		Semester Hours
Methods and Practice in Teaching Physical Education Activities	4	Organization and Administration of Physical Education	3
Methods and Materials for Teaching Team Sports in Secondary Schools	4	Electives	12
Physiology	3	Total	33
Electives	2		
Total	33		

Physical Education and Recreation Curriculum

The minimum requirements for this curriculum are 66 semester hours, distributed as follows:

JUNIOR YEAR	Semester Hours	SENIOR YEAR	Semester Hours
Human Development, Learning, and Teaching	3	Common Teaching Skills in Secondary Schools	3
Society and the School	6	Observation and Student Teaching in Secondary Schools	6-9
Introduction to Recreation	2	History and Principles of Physical Education	3
Techniques for Teaching Recreational Dance	1	Methods and Materials for Health Education	3
Leadership Organization in the Intramural Program	4	Tests and Measurements in Physical Education	3
Methods and Practice in Teaching Physical Education Activities	4	Organization and Administration of Physical Education	3
Camp Leadership	1	Community organization for Recreation	3
Recreational Leadership Activities	6	Administration of Community Recreation Programs	3
Electives	6	Electives	3
Total	33	Total	33

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION FOR WOMEN

There are three curricula leading to the degree. The Dual-Major Teacher's Curriculum is designed to prepare students for teaching positions in smaller schools where it is necessary to teach an academic subject in addition to Physical Education.

The Single-Major Teacher's Curriculum prepares for the teaching of Physical Education in the larger schools. Within this curriculum there is opportunity for specialization in dance, sports, or correctives.

The Physical Education and Recreation Curriculum has been planned for those who wish to be prepared to direct programs of recreation in addition to teaching Physical Education.

PREREQUISITE

The following two-year curriculum offered in the Junior College is required for admission to the School of Education as a candidate for the degree of Bachelor of Science in Physical Education for Women.

	Semester Hours
English	English 1, 2..... 6
Physical Education	English 51-52, 71-72, or 91-92..... 6
Science	1-2, 11-12..... 4
Social Studies	Biology 1-2 or Zoology 1-2..... 6 or 8
Major Prerequisites.....	History 39-40, 71-72; Political Science 1 and 9, 1 and 10, or 9-10; or Sociology and Anthropology 1-2..... 6
Academic Electives	Physical Education 43-44 (Freshman year)..... 4
	Physical Education 49, 50, 51-52; Psychology 1, 22 (Sophomore year)..... 16
	(Each year)..... 6 or 8
Total.....	64

Dual- or Single-Major Teacher's Curriculum

The student desiring to prepare herself to teach another subject in addition to Physical Education for Women may do so by choosing her elective hours from one subject-matter field with the advice of the Dean of the School of Education. Relevant work completed in the Junior College may be counted in this subject-matter field.

JUNIOR YEAR	Semester Hours	SENIOR YEAR	Semester Hours
Human Development, Learning, and Teaching	6	Society and the School	6
Physical Education in the Elementary School	3	Observation and Student Teaching in Secondary Schools	6
History and Principles of Physical Education	3	Methods and Practice in Teaching Physical Education Activities	4
Advanced Physical Education and Physical Examinations	6	Methods and Materials for Health Education	3
Techniques for Teaching Recreation, Dance	1	Tests and Measurements in Physical Education	3
Methods and Materials for Teaching Physical Education Activities in Secondary Schools and Colleges	4	Organization and Administration of Physical Education	3
Methods of Teaching Modern Dance	1	Electives	6
Dance Production	1	Total	34
Physical Leadership	1		
Physical Education	3		
Physical Education	3		
Total	32		

Physical Education and Recreation Curriculum

JUNIOR YEAR		Semester Hours	SENIOR YEAR		Semester Hours
Introduction to Recreation		2	Society and the School		6
Physical Education in the Ele- mentary School		3	Observation and Student Teach- ing in Secondary Schools		6
Adapted Physical Education and Physical Examinations		6	History and Principles of Phys- ical Education		3
Leadership Organization in the Intramural Program		4	Techniques for Teaching Recre- ational Dance		1
Methods and Materials for Teach- ing Physical Education Activi- ties in Secondary Schools and Colleges		4	Methods and Practice in Teaching Physical Education Activities		4
Methods of Teaching Modern Dance		1	Methods and Materials for Health Education		3
Dance Production		1	Camp Leadership		1
Recreational Leadership Activities		6	Organization and Administration of Physical Education		3
Physiology		3	Community Organization for Rec- reation		3
Elective		3	Administration of Community Recreation Programs		3
Total		33	Total		33

BACHELOR OF ARTS IN EDUCATION

Programs leading to the degree of Bachelor of Arts in Education have four main objectives: (1) provision of general educational backgrounds, (2) a functional command of ideas, concepts, knowledges, and skills in one or more teaching fields, (3) a mastery of basic professional information and skills adequate for a beginning teacher, and (4) development of attitudes needed for success in teaching. Since the contents of teaching fields differ in scope and complexity, some programs are longer than others in terms of semester hours. None require less than 126 semester hours of satisfactory work, exclusive of required Physical Education.

Normally, from 60 to 64 semester hours of the total requirement are completed in the Junior College of the University or in an equivalent institution elsewhere.

GENERAL EDUCATION

The general educational backgrounds needed by prospective teachers are obtained through: (1) precollege education, (2) college courses, (3) work experience, (4) leadership activities, (5) participation in student campus activities, and (6) utilization of off-campus cultural opportunities.

College course requirements of the pre-Education curriculum.—Course requirements depend in part upon the senior high school credits presented for college admission. They are as follows:

English

English 1, 2: English Composition	Semester Hours	6
Before students are registered in English 1, they are tested in the minimum essentials of vocabulary, spelling, grammar, standard usage, and writing skill. Those students who show marked superiority may, upon passing further tests, be exempted from one or both semesters of the English Composition course; those who are inadequately prepared for English 1 will be assigned to English A. English 1 is a prerequisite to all other courses in English.		
One of the following survey courses in literature.....		6
English 51-52: Introduction to English Literature		
English 71-72: Introduction to American Literature		
English 91-92: Introduction to European Literature		

Foreign Languages

French, German, Latin, Russian, or Spanish.....	12
A student offering for admission four acceptable high school units of a single foreign language, or the equivalent, is not required to take any foreign language. If he offers three units, he must complete the second semester of the second-year college course in the same language. If he offers two units, he must complete the entire second-year college course in the same language. If he offers one unit, he must complete the second semester of the first-year college course and the second-year course in the same language.	

Physical Education

Physical Education 1-2 and 11-12
A student may be exempted from this requirement if registered for less than three courses or regularly employed during the day.

Science and Mathematics

Two semesters of science or mathematics to supplement senior high school courses in these fields and chosen from the following.	6-8
Biology 1-2: Survey in Biology	
Botany 1-2: General Botany	
Chemistry 3-4: Survey of Physical Sciences	
Chemistry 11-12: General Chemistry	
Mathematics 2 and 3: General Mathematics and College Algebra, or 3 and 6 College Algebra and Plane Trigonometry, or 6 and 12 Plane Trigonometry and Analytic Geometry	
Physics 11, 12: Introductory Physics	
Zoology 1-2: Introduction to Zoology	

Social Studies

History 71-72: The Development of the Civilization of the United States	6
Another Social Science chosen from the following courses.....	6

Economics 1-2: Principles of Economics
 Geography 51, 52: Introduction to Geography: World Regions
 History 39-40: The Development of European Civilization
 Political Science 1 and 9, 1 and 10, or 9-10: Introduction to
 Government; Government of the United States
 Religion 59-60: History of Religions
 Sociology and Anthropology 1-2: Man in Modern Society
 A student offering for admission two or more acceptable senior
 high school units in the Social Studies may be exempted from this
 requirement

Other Courses

Psychology 1: General Psychology 3
 Psychology 22: Educational Psychology; Speech 1: Effective Speak-
 ing; Speech 11: Voice and Diction 3
 Students who demonstrate marked superiority in Speech may be
 exempted from this requirement. Such exemption is granted only
 on the recommendation of the Department of Speech.
 Statistics 53: Introduction to Statistics in Psychology and Education 3

Academic Electives

Electives may be increased through the various exemptions

Minimum required credits..... 60

Work experience, leadership activities, participation in student campus activities, and the utilization of off-campus cultural opportunities.—(Obviously, these cannot be prescribed. Nevertheless, they constitute an important part of the general educational background of prospective teachers. In conference with a staff member of the Department of Education assigned as his general adviser, the student is expected to plan adequate experiences in these areas. Not later than one month after matriculation in the School of Education the student must file in the Office of the Dean a statement of such plans approved by his adviser. He must also keep his adviser informed concerning the fulfillment of his plans and to this end include in plans filed, scheduled conferences with his adviser.

Success of the student in enriching his general educational background by these means will be taken into consideration at the end of the first semester of the junior year when the faculty will review the qualifications of candidates to determine any who are not of sufficient promise as prospective teachers to warrant continuation of their candidacies. Success in these activities will also be considered when the list of candidates is again reviewed early in the last semester of the senior year immediately after the results of the National Teacher Examinations are available. In estimating the success of the student in this connection, more weight will

be given to evidence of initiative, eagerness to make the most of each experience, balance, and quality of experience than to the number of different experiences.

Although the student is not required to establish a program of non-academic activities until he becomes a degree candidate in the School of Education, he is advised to do so as soon as he enters the Junior College. To this end, he should consult with the Junior College adviser of students in the pre-Education curriculum soon after entering the Junior College. Whatever is accomplished in this connection while in the Junior College will reduce the obligations of the student after admission to the School of Education.

TEACHING-FIELD PREPARATION

Teaching-field preparation depends upon the kind of teaching position for which the student is preparing. Those planning to teach in elementary schools need a degree of competency in several fields. Those preparing to teach in junior or senior high schools must demonstrate competency in a major teaching field and a minor teaching field. Ordinarily, students preparing to teach in evening schools for adults are required to prove competency in only one teaching field.

The student should begin teaching-field preparation while in the Junior College and should make provision for it in planning his program of studies.

Teaching-field requirements include satisfactory completion of prescribed academic courses in one or more fields, a satisfactory score on the special field examination of the National Teacher Examinations, and satisfactory completion of the prescribed special methods courses.

Prescribed academic courses vary in number in accordance with the scope and complexity of the teaching field and the license requirements of the various states. Minimum academic course requirements for each major teaching field are listed on succeeding pages. Minor teaching-field requirements are somewhat less than those of a major field. They are determined in conference with an adviser. Students preparing to teach on the elementary level are advised to use free electives to increase their mastery of content in an academic field.

The prescribed course in special methods is concerned primarily with methods of initiating, guiding, and evaluating learning experiences dealing with the content of the teaching field. It attempts to bring to the student specific suggestions drawn from the accumulated experience of successful teachers. However, in addition, the course reviews the teaching field content currently in use in schools and the examination at the end of the course provides the final test of competency in the teaching field.

Prescribed Courses in the Various Teaching Fields*

ART		Semester Hours
Six semester hours from the following.....		6
Art 1: Art Appreciation		
Art 31-32: Survey of Art		
Art 71-72: Introduction to the Arts in America		
Art 101: Ancient Art		
Art 102: Medieval Art		
Art 109: Nineteenth Century Art in Europe		
Art 110: Contemporary Art		
Art 205: Baroque Art in Italy		6
Six semester hours from the following.....		
Art 105: Renaissance Art in Italy		
Art 106: Renaissance Art in the North		
Art 203: Primitive Art		
Art 204: Art of the Far East		
Art 210: Christian Iconography		24
Twenty-four semester hours from the following.....		
Art 21-22: Basic Design		
Art 45-46: Drawing and Painting I—Life and Still Life		
Art 65-66: Drawing and Painting I—Life, Still Life, and Portrait		
Art 67-68: Drawing and Painting I—Life and Portrait		
Art 81-82: Sculpture I		
Art 125-26: Drawing and Painting II—Life, Still Life, and Portrait		
Art 127-28: Drawing and Painting II—Life and Portrait		
Art 165-66: Drawing and Painting II—Life and Portrait		
Art 179-80: Sculpture II		
Art 183-84: Commercial Art		36

Total.....

BIOLOGY		
Biology 1-2: Survey in Biology.....		6
Botany 1-2: General Botany.....		6
Home Economics 152: Nutrition.....		1
Physiology 115: Physiology.....		1
Zoology 1-2: Introduction to Zoology.....		8
*Additional courses, as approved by the adviser.....		9
Total.....		35

BUSINESS EDUCATION		
Accounting 1: Introductory Accounting.....		3
Economics 1-2: Principles of Economics.....		6
Secretarial Studies 51: Business Correspondence.....		3
Additional courses, as prescribed, in one of the following groups:		
Group 1—Secretarial Studies†		

* Not required for the minor.

† Candidates inadequately prepared for Secretarial Studies 3 or 13 may be required to take Secretarial Studies 1 or 11.

	Semester Hours
Secretarial Studies 2: Intermediate Typewriting	3
Secretarial Studies 12: Intermediate Shorthand and Transcription	3
Secretarial Studies 15: Advanced Shorthand, Typewriting, and Transcription	3
Secretarial Studies 16: Secretarial Shorthand, Typewriting, and Transcription	3
Secretarial Studies 54: Secretarial Practice	3
*Additional courses from the following, as approved by the adviser	6
Accounting 2: Introductory Accounting	
Business Administration 101: Business Organization and Combination	
Business Administration 109: Office Management	
Business Administration 141: Principles of Marketing	
Business Administration 151: Retail Store Management	
Business Administration 161: Commercial Law: Contracts, Sales, Agency, and Bailments	
Economics 121: Money and Banking	
Statistics 52: Mathematics of Finance	
Total	33
Group 2—Bookkeeping, Business Arithmetic, and Business Law	
Accounting 2: Introductory Accounting	3
Business Administration 101: Business Organization and Combination	3
Business Administration 109: Business Management	3
Business Administration 161: Commercial Law: Contracts, Sales, Agency, and Bailments	3
Business Administration 162: Commercial Law: Negotiable Instruments, Property, Mortgages	3
Statistics 52: Mathematics of Finance	3
*Six semester hours from the following, as approved by the adviser	6
Accounting 111: Financial Statement Analysis	
Business Administration 121: General Insurance	
Business Administration 131: Business Finance	
Business Administration 138: Investments	
Economics 121: Money and Banking	
Total	36
Group 3—Distributive Education	
Business Administration 141: Principles of Marketing	3
Business Administration 142: Marketing Management Problems	3
Business Administration 145: Sales Management	3
Business Administration 151: Retail Store Management	3
*Twelve semester hours from the following, as approved by the adviser	12
Business Administration 147: Advertising	
Business Administration 150: Procurement and Materials Management	
Business Administration 158: Traffic Management	

* Not required for the minor

Business Administration 175:	Introduction to Foreign Trade
Business Administration 176:	Exporting and Importing

36

Total.....

CHEMISTRY

Chemistry 11-12:	General Chemistry	8
Chemistry 21:	Qualitative Inorganic Analysis	4
Chemistry 22:	Quantitative Inorganic Analysis I	4
Chemistry 151-52:	Organic Chemistry	8
Chemistry 191:	History of Chemistry	2
Mathematics 3:	College Algebra	3
Mathematics 6:	Plane Trigonometry	3
Mathematics 12:	Analytic Geometry	3
Physics 11, 12, 13:	General Physics	0

34

Total.....

ELEMENTARY EDUCATION

Education 113:	Elementary School Art	3
Education 114:	Elementary School Music	3
Geography 51, 52:	Introduction to Geography, World Regions	6
History 71-72:	Development of the Civilization of the United States	6
Mathematics 2:	General Mathematics	3
Physical Education 101:	Physical Education in Elementary School	3
Science, as approved by adviser:		6-8
Six semester hours from the following, as approved by the adviser:		6
Economics 1-2:	Principles of Economics	
History 39-40:	Development of European Civilization	
Political Science 9-10:	Government of the United States	
Religion 59-60:	History of Religion	
Sociology and Anthropology 1-2:	Man in Modern Society	

36-38

Total.....

ENGLISH

English 1, 2:	English Composition	6
English 52:	Introduction to English Literature	3
English 71-72:	Introduction to American Literature	6
English 125:	Introduction to Linguistics	3
English 135-36:	Shakespeare	6
Speech 11:	Voice and Diction	3
*Nine semester hours from the following, as approved by the adviser:		9
English 151-52:	The Romantic Movement	
English 161-62:	Victorian Literature	
English 165-66:	The Twentieth Century	
English 171-72:	Studies in American Literature	
English 173-74:	Major American Poets	
English 176:	American Drama	

* Not required for the minor.

English 177-78: American Fiction
English 182: The English Novel
English 199: Proseminar

Semester
Hours

Total 36

FRENCH

French 1-2: First-year French 6
French 3-4: Second-year French 6
French 9-10: French Conversation and Composition 6
French 51-52: Survey of French Literature and Civilization 6
*Additional courses in French, as approved by the adviser..... 12

Total..... 36

GENERAL SCIENCE¹

Chemistry 11-12: General Chemistry 8
Chemistry 21: Qualitative Inorganic Analysis 4
Physics 11, 12, 13, 16: General Physics 12
Nine semester hours from the following 9
Mathematics 3: College Algebra
Mathematics 6: Plane Trigonometry
Mathematics 12: Analytic Geometry
Mathematics 29, 30, 31: Calculus I, II, III
One of the following 6-8
Biology 1-2: Survey in Biology
Biology 1-2: General Botany
Zoology 1-2: Introduction to Zoology

Total 39-41

GEOGRAPHY

Geography 51: Introduction to Geography..... 3
Geography 52: World Regions 3
Geography 103-4: Cartography 6
Geography 115-16: Physical Geography 6
Geography 141-42: Urban Settlement 6
Six semester hours from the following 6
Geography 183: Western Europe
Geography 184: The Mediterranean
Geography 191: Latin America
Geography 195: Eastern and Southeastern Asia
Geography 197: The Pacific
Geography 198: Australia
Six semester hours from the following 6
Geography 125: Trans-Atlantic Commerce
Geography 126: World Food Production

¹ May be replaced by the student.
² May not be chosen as a minor field.

Geography 133:	Regional Industrial Structures
Geography 134:	Location of Industry
Geography 145:	World Cultural Geography
Geography 146:	World Political Geography

Total..... 36

GERMAN

German 1-2:	First-year German.....	8
German 3-4:	Second-year German.....	6
German 9-10:	German Conversation and Composition.....	6
German 51-52:	Introduction to German Literature.....	12
*Additional courses in German, as approved by the adviser.....		36

Total..... 36

HISTORY

History 39-40:	The Development of European Civilization.....	6
History 71-72:	The Development of the Civilization of the United States.....	6
Six semester hours from each of the following groups, as approved by the adviser.....		18
Group 1—American History		
History 171-72:	Social History of the United States	
History 173:	Representative Americans	
History 174:	Economic History of the United States	
History 181-82:	Diplomatic History of the United States	
Group 2—European History		
History 129:	Thought and Culture of the Western World I: Ancient Civilization	
History 110:	Thought and Culture of the Western World II: The Middle Ages and Renaissance	
History 130:	Nationalism	
History 145-46:	Russian History	
History 147:	Economic History of Europe	
History 149-50:	European Diplomatic History	
History 151-52:	English History	
*Group 3—Latin American History		
History 163:	Colonial Latin America	
History 164:	South America since Independence	
History 166:	Mexico and the Caribbean since Independence	
Political Science 177:	Recent Trends in Latin American Politics and Government	
Political Science 178:	International Politics in the Western Hemisphere	
*Additional semester hours from one of the foregoing groups, as approved by the adviser.....		0
Total.....		36

* Not required for the minor.

HOME ECONOMICS

	Semester Hours
Home Economics 1: Food Selection and Preparation.....	3
Home Economics 22: Clothing: Its Selection, Cost, and Care.....	3
Home Economics 51: Family Meals.....	3
Home Economics 53: Family Health and Household Sanitation.....	3
Home Economics 62: Clothing Construction.....	3
Home Economics 102: Advanced Food Preparation.....	3
Home Economics 123: Household Finance and Problems of the Consumer.....	3
Home Economics 143: Advanced Clothing Construction.....	3
Home Economics 152: Nutrition.....	3
Home Economics 171: House Furnishing.....	3
Home Economics 181: The Child in the Home.....	3
Home Economics 192: The Home, Its Management and Equipment.....	3
Physiology 115: Physiology.....	3
Total.....	39

MATHEMATICS

Mathematics 3: College Algebra.....	3
Mathematics 6: Plane Trigonometry.....	3
Mathematics 12: Analytic Geometry.....	3
Mathematics 29, 30, 31: Calculus I, II, III.....	9
Mathematics 102: Fundamental Concepts of Mathematics (or an alternative approved by the adviser).....	3
Mathematics 124: Theory of Equations, or.....	3
Mathematics 125: Advanced Algebra.....	3
Mathematics 132: Differential Equations, or.....	3
Mathematics 136: Advanced Calculus.....	3
An additional course in Mathematics, as approved by the adviser....	3
Total.....	30

PHYSICS

Physics 11: Introductory Physics.....	3
Physics 14, 15, and 16: General Physics.....	9
Physics 55: Physical Measurements.....	3
Physics 101: Mechanics.....	3
Physics 105: Principles of Electricity.....	3
Physics 106: Optics.....	3
Chemistry Elective—Chemistry 11-12: General Chemistry or.....	3
Chemistry 12 and 21: General Chemistry and Qualitative Inorganic.....	8
Mathematics 12: Analytic Geometry.....	3
Mathematics 29, 30, 31: Calculus I, II, III.....	9
6 semester hours from the following:	6
Physics 102: Heat and Thermodynamics.....	
Physics 113: Atomic Physics.....	
Physics 114: Statistical Physics.....	
Physics 126: Sound.....	

*Not required for the minor.

	Semester Hours
Physics 132: Electronics	
Physics 155: Advanced Laboratory in Electricity and Magnetism	
Physics 156: Advanced Laboratory in Optics	
Total	50
RUSSIAN*	
Russian 1-2: Elementary Russian	6
Russian 3-4: Intermediate Russian	6
Russian 9-10: Russian Conversation	6
Russian 101-2: Rapid Readings in Russian	6
Total	24
SOCIAL STUDIES	
History 39-40: The Development of European Civilization	6
History 71-72: The Development of the Civilization of the United States	6
Political Science 9-10: Government of the United States	12
Twelve semester hours from the following:	
Economics 1-2: Principles of Economics	
Geography 51, 52: Introduction to Geography: World Regions	
Religion 59-60: History of Religion	
Sociology and Anthropology 1-2: Man in Modern Society	
†Additional second-group courses, as approved by the adviser, from one of the following fields: Economics, Geography, History, Political Science, Religion, Sociology and Anthropology	12
Total	42
SPANISH	
Spanish 1-2: First-year Spanish	6
Spanish 3-4: Second-year Spanish	6
Spanish 9-10: Spanish Conversation and Composition	18
†Additional courses, as approved by the adviser	3
Total	33
SPEECH	
Speech 1: Effective Speaking	
Speech 2: Persuasive Speaking	
Speech 11: Voice and Diction	
Speech 32: Oral Reasoning	
Speech 121: Voice and Phonetics	
Speech 121: Group Discussion and Conference Leadership	
Speech 153: Acting	
Speech 175: Speech Correction	

* May be chosen as a minor field only.

† Not required for the major.

One of the following areas of specialization, as approved by the adviser:

Semester
Hours

•Group 1—Speech Arts

Twelve semester hours from the following.....	12
Speech 102: Oral Interpretation of Literature	
Speech 126: Public Discussion and Debate	
Speech 154: Play Production	
Speech 166: History of the Theater	
Speech 169: Creative Dramatics and Children's Theater	

•Group 2—Speech Correction

Twelve semester hours from the following.....	12
Speech 176: Speech Correction	
Speech 177-78: Clinical Practice in Speech Therapy	
Speech 182: Hearing Problems and the Testing of Hearing	
Speech 183-84: Clinical Practice in Hearing Therapy	
Speech 191: Proseminar Speech Correction	
Additional courses in English, Physiology, Psychology, or Speech, as approved by the adviser	

Total..... 36

Professional Education

The basic professional information, skills, and attitudes needed by beginning teachers are provided through a sequence of courses to be taken in the junior and senior years. Lectures and class discussions are closely coordinated with field work. Instruction is differentiated to meet the needs of those preparing to teach on the various levels—elementary school, junior high school, senior high school, and adult.

PROFESSIONAL COURSES—SECONDARY

Education 120-121: Human Development, Learning, and Teaching...	Semester Hours	6
Education 121-22: Society and the School.....		6
Education 131: Common Teaching Skills in Secondary Schools...		3
Education 133-34: Observation and Student Teaching in Secondary Schools.....		6-9
Three to six semester hours from the following Special Methods courses		3-6
Education 136: Teaching English		
Education 138: Teaching Social Studies		
Education 140: Teaching Mathematics		
Education 144: Teaching Science		
Education 146: Teaching Foreign Languages		
Education 148: Teaching Home Economics		
Education 150: Teaching Business Subjects		

Total..... 24-30

PROFESSIONAL COURSES—ELEMENTARY

Education 109-110: Human Development, Learning, and Teaching...	6
Education 111: Methods in Elementary Education.....	6-12
Education 112: Guidance in Elementary Schools.....	3

* Not required for the minor

	Semester Hours
Education 121-22: Society and the School.....	6
Education 135: Student Teaching in Elementary Schools.....	9
Total.....	30

Human Development, Learning, and Teaching.—Students enrolled in the four-year programs leading to the degree of Bachelor of Arts take this course in the junior year. Those enrolled in five-year programs take it in the senior year.

This course attempts to promote a functional understanding of (1) the nature of human growth, development, and learning, illustrated by observation of children in learning situations; (2) the nature of teaching based on principles of human growth, development, and learning, illustrated by observation of school situations. At least an equal amount of time is spent in observation and study of the application of these characteristics and principles to classroom situations. Class discussion normally revolves around these field experiences.

The course is also intended to provide the student with exploratory experiences of assistance to him in deciding whether to choose the profession of teaching. The student's performance in connection with the course is one of the factors considered when the Faculty reviews the list of candidates who have completed the first semester of the junior year (senior year for those enrolled in five-year programs).

Society and the School.—This course is also taken in the junior year by candidates enrolled in four-year programs (senior year by those in five-year programs).

The first half of the course attempts to promote an understanding and appreciation of the role of schools in the sound promotion of the enduring interests of our democratic society. More particularly, it attempts to develop a functional understanding of the contributions of all social agencies in the education of people and of desirable cooperative working relations that help the school to play its part as a member of the institutional "team" of the community.

The second half of the course is concerned with study of the school as a whole—its purposes, program of studies, out-of-class activities, general organization, and major instructional problems. Although schools at all levels are studied, students give particular attention to schools at the level within which they are preparing to teach.

Classes meet for lecture and discussion for one two-hour meeting each week. At least an equal amount of time is spent in field study. During the first half each student studies cooperating social institutions. In the second half extended study of schools at the level of the student's special

interest is supplemented by briefer studies of schools at other levels. Class discussion is largely determined by field experiences.

This course is also intended to provide the student with exploratory experiences of guidance value. The performance of the student in the first half of the course is also given careful consideration by the Faculty in its review of the list of candidates at the beginning of the second semester of the junior year (senior year for those enrolled in five-year programs).

Common Teaching Skills in Secondary Schools.—Those enrolled in four-year programs take this course in the senior year. Those enrolled in five-year programs take it in the fifth year.

The course is concerned with the skills needed by teachers in connection with classroom management, teaching techniques, homeroom procedures, administrative routines, activity sponsorship, group planning, and public relations.

Classes meet for one and one-half hours twice a week for lecture, discussion, and laboratory. The observation of classroom teaching done in connection with the Observation Course (Education 133), for which students are normally enrolled concurrently, provides the field work of the course.

Special Methods Courses.—Associated with each teaching field is a course dealing with its special teaching problems. In addition to the study of practices followed by successful teachers, actual teaching content as found in current texts and courses of study is reviewed. Needed preparation, not included in academic courses available for teaching-field preparation, is taught in these courses.

Observation and Student Teaching in Secondary Schools.—This course is taken in the senior year by students enrolled in four-year programs (in the fifth year by those in five-year programs).

It begins with the observation of classroom teaching in selected situations. Assumption of responsibility for teaching functions is gradual, leading eventually to practice in the complete direction of classroom activities. Those preparing to teach in secondary schools have the opportunity of observing and doing practice teaching in both major and minor teaching fields on the senior high school level. The course is directed by full-time members of the faculty of the School of Education. The work of each student is under the direct supervision of a critic teacher, selected because of unusual success in teaching, ability to supervise, and broad understanding of educational problems. Critic teachers are part-time members of the instructional staff of the School. Observation and student teaching are done in the public schools of the metropolitan area of Washington, assuring practice in situations comparable to those the student is likely to face on becoming a teacher.

Special Curricula in Elementary Education

Students preparing for elementary school teaching may also qualify as teachers of French, Spanish, remedial speech, and remedial reading. Programs should be planned in conference with an adviser.

ATTITUDES NEEDED FOR SUCCESS IN TEACHING

The development of attitudes that motivate professional behavior consistent with the nature of the learning-teaching process is basic to success in teaching. Among the most important of these attitudes are: appreciation of the role of learning in human improvement, respect for intellectual proficiency and true scholarship, objective thinking, and a sense of mission as a member of an important profession.

The responsibility for developing and strengthening attitudes favorable to success in teaching is shared by all parts of the program of teacher education. General education provides a foundation of information essential to an understanding of the course of human events, skills that promote effective social intercourse, the bases of perspective, and an appreciation of cultural development. Teaching-field preparation stimulates intellectual curiosity and respect for objective scholarship in contrast to rationalization. Professional education is organized in a sequence of learning activities primarily based upon the results of research concerning the ways in which the learner grows and develops.

To help students understand the role of education in society and human development and, thus, strengthen a sense of mission and pride in becoming members of the teaching profession, professional courses are closely related to field experiences, and students are encouraged to discuss freely varying viewpoints concerning goals and the interpretation of research data.

Since individual needs in the development of attitudes vary widely, students are encouraged to confer frequently with staff members. Conference hours are designated for this purpose.

FIVE-YEAR PROGRAMS LEADING TO THE DEGREES OF BACHELOR OF ARTS AND MASTER OF ARTS IN EDUCATION

Five-year programs are designed: to permit more adequate teaching-field and professional preparation, to prepare for special teaching positions, and to meet teaching-certificate requirements based upon five years of preparation.

Students in these programs usually devote the junior year to additional teaching-field preparation and general education. Ordinarily,

teaching-field preparation is continued in the senior year and the first two professional courses (Education 109-10, 121-22) are taken. The work of the fifth year includes the remaining undergraduate professional courses and the balance of graduate courses needed to meet the requirements of the degree of Master of Arts.

Candidates must have a quality-point index of at least 2.50 before beginning the work of the senior year. As much as 18 semester hours of the work of the senior year may be taken for graduate credit. Observation and Student Teaching in Secondary Schools, taken in the fifth year, may not be taken for graduate credit.

Candidates enrolled in five-year programs are able to prepare more adequately in their major or minor teaching fields, or in both. Additional teaching-field courses must be approved by the adviser in the teaching field concerned.

The five-year plan of study also provides an opportunity for candidates to prepare to teach "common learnings" courses in one or more of the various core curriculum plans now being adopted in many secondary schools. Such programs need to be carefully planned to meet the demands of the situation in which the candidate hopes to teach.

A number of cities and some states require five years of satisfactory preparation before issuing certain teaching certificates. Candidates seeking such certificates should familiarize themselves with the requirements of the community or state concerned and plan their programs accordingly.

Five-year programs must meet all the requirements of the degrees of Bachelor of Arts and Master of Arts in Education, and must be approved by the adviser designated for these programs.

THE DEGREE OF MASTER OF ARTS IN EDUCATION

Programs of study leading to the degree of Master of Arts in Education are designed to enable teachers of experience to increase their knowledge of professional and academic information and skills, prepare for special types of educational service, and provide opportunities for graduates of liberal arts colleges to acquire needed professional education.

Programs are planned in conference with the designated Adviser and take into consideration the interests of the candidate, his previous background, and the certification requirements of the state and locality in which he plans to teach.

PLANS OF STUDY

Two general plans of study lead to the degree.

Plan 1.—This plan requires a minimum of 30 hours of graduate credit, including a thesis carrying 6 hours of graduate credit.

Plan 2.—This plan requires a minimum of 33 hours of graduate credit, including a course in *Educational Research Methods and Procedures* carrying 3 hours of graduate credit.

Under *Plan 1*, a minimum of 12 semester hours, in addition to the thesis, must be from courses planned primarily for graduate students (third-group courses). Under *Plan 2*, a minimum of 18 semester hours, in addition to the course in *Educational Research Methods and Procedures*, must be from third-group courses. Under either plan a minimum of 12 semester hours, not including the thesis or the research course, must be from courses offered in the Department of Education.

Programs may provide for additional academic preparation in one or more teaching fields. In such cases, however, undergraduate and graduate courses combined must be at least equivalent to the undergraduate requirements for the degree of Bachelor of Arts in Education in the teaching field concerned.

Programs are normally based upon undergraduate preparation equivalent to the requirements for the degree of Bachelor of Arts in Education (see pages 14-28). Candidates with less preparation must make up their deficiencies either prerequisite to or as part of their graduate study.

Each candidate must file in the Office of the Dean not later than one month after admission to the School of Education a program of study approved by his adviser.

THE THESIS

The thesis required under *Plan 1*, must conform to standards prescribed. A statement of these standards may be obtained at the Office of the Dean.

The thesis subject must be approved in writing by the candidate's adviser and recorded in the Office of the Registrar by the date announced in the University calendar. The thesis in its final form must be presented to the Dean by the candidate no later than the date announced in the calendar. Printed copies of detailed regulations regarding the form and reproduction of the thesis (see pages 45-46) are available in the Office of the Dean.

Payment of tuition for the thesis will entitle the candidate, during the academic year of registration, to the advice and direction of the member of the Faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year may be granted without further tuition payment. The student must, however, be registered in residence during this period. If the preparation of the thesis extends

beyond the two-year period it must be registered for again and tuition paid on the same basis as for a repeated course.

COMPREHENSIVE EXAMINATION

In addition to the course examinations, the candidate must pass a comprehensive examination in two parts: (1) a general three-hour examination concerned with an integrated understanding of the major areas in professional education, and (2) a special three-hour examination concerned with the candidate's area of specialization.

PROGRAMS OF STUDY

Secondary Education—Senior or Junior High School

Students interested in secondary school teaching whose undergraduate degrees are in professional education are encouraged to strengthen their teaching-field preparation by including in their programs of study content courses.

Programs include, in addition to teaching-field courses 6 semester hours in Secondary Education, and an additional 12 semester hours of work chosen from the following professional courses: Audio-visual Education; Adolescent Growth and Development; Comparative Education; Contemporary Problems in Education; Curriculum; Educational Measurement; Evaluation in Education; Extra-classroom Activities; Group Procedure in Education; Guidance in Secondary Schools; History of Education; Human Development, Learning, and Teaching; Teaching Secondary School English; and Teaching Secondary School Social Studies.

School Administration—Secondary School Principalship or Elementary School Principalship

Programs in administration include The Teacher and School Administration, The Teacher and School Supervision, and either Secondary School Management or Administration of Elementary Education. Additional courses are chosen as needed from Adult Education, Curriculum, Basic Issues in Elementary Education, Guidance, Public Relations, School Finance, School Law, Planning the School Plant, and Secondary Education.

Adult Education

Programs in the education of adults may include additional teaching-field preparation. In addition to 6 semester hours in Adult Education, professional courses may be chosen from Audio-visual Education; Contemporary Problems in Education; Curriculum; Educational Measure-

ment; Employee Training; Evaluation in Education; Group Procedures in Education; Guidance; History of Education; Human Development, Learning, and Teaching; Mental Hygiene.

Elementary Education

Programs customarily include Basic Issues in Elementary Education and Instructional Areas in Elementary Education, with additional courses chosen from Audio-visual Education; Child Growth and Development; Children's Literature; Contemporary Problems in Education; Curriculum; Educational Measurement; Education of Exceptional Children; Elementary School Classroom Procedures; Evaluation in Education; Group Procedures in Education; History of Education; Human Development, Learning, and Teaching; Mental Hygiene; Reading Problems; and Speech Correction.

Comparative Education

Programs in comparative Education usually include 12 semester hours in Contemporary Problems in Education and Comparative Education, with additional courses chosen from Adult Education, Basic Issues in Elementary Education, Curriculum, History of Education, and Secondary Education.

Curriculum

Programs in curriculum development include 9 semester hours in Curriculum, with additional courses chosen from Adolescent Growth and Development; Adult Education; Audio-visual Education; Child Growth and Development; Educational Measurement; Elementary Education; Evaluation in Education; Extra-classroom Activities; Group Procedures in Education; Human Development, Learning, and Teaching; and Secondary Education.

Employee Training

Programs in the training of employees in business, industry, and government normally include 12 semester hours in Employee Training and Adult Education. Additional courses are chosen from Audio-visual Education, Contemporary Problems in Education, Curriculum, Guidance, Mental Hygiene, Personnel Psychology, Public Relations, and Techniques of Counseling.

Guidance

Programs in guidance usually include courses in Educational and Vocational Guidance, Techniques of Counseling, Guidance in Secondary Schools, and Occupational and Educational Information. Additional courses frequently chosen include Adult Education, Contemporary Prob-

lems in Education, Curriculum, Employee Training, Evaluation in Education, Group Procedures in Education, Individual Psychological Testing, Personnel Psychology, Psychological Tests, Secondary Education, and Test Construction.

Philosophy and History of Education

Programs in the philosophy and history of education include 12 semester hours in these fields, with additional courses chosen from Adult Education, Basic Issues in Elementary Education, Curriculum, School and Community, and Secondary Education.

Reading

Programs in developmental and remedial reading include courses in Reading Problems and the Clinical Study of Reading Problems. Additional courses are chosen from Child Growth and Development, Contemporary Problems in Education, Curriculum, Education of Exceptional Children, and Education of Slow-learning Children.

Teacher Education

Programs in teacher education include 6 semester hours in this field, with additional courses chosen from Adolescent Growth and Development, Child Growth and Development, Contemporary Problems in Education, Curriculum, History of Education, and Secondary Education.

THE ADVANCED PROFESSIONAL CERTIFICATE

Upon the satisfactory completion of the program of advanced graduate studies of the School of Education, the Advanced Professional Certificate is granted. This program is designed to prepare teachers and administrators for more effective service in their chosen fields and to enable them to qualify for a higher step in the local salary scale.

The program of studies leading to the certificate is selected by the candidate and his adviser from the various related departments of the University in accordance with the student's needs. He is encouraged to include in his program study at other accredited higher institutions when such study seems to be in his best interest. In general it includes thirty hours of graduate credit beyond the Master's degree. The candidate wishing to increase his teaching proficiency may include additional study in his teaching field.

REQUIREMENTS FOR THE CERTIFICATE

Plans of Study

In planning his program of studies the candidate should give first consideration to his particular needs. If he is a teacher and his graduate study leading to the Master's degree was largely in professional education, he may find it desirable to emphasize additional mastery of his teaching field. If his Master's preparation was in a content field, he may wish to devote a major part of his program to additional professional study. Those in administration and related services may wish to continue specialization on a more advanced level.

The program of study must include, in addition to any prerequisites, a minimum of 30 hours of graduate credit in third-group courses and not less than 12 semester hours in courses offered by the School of Education.

RESIDENCE

Candidates for the Advanced Professional Certificate must complete satisfactorily at this University a minimum of 18 semester hours in courses offered on the campus. The balance of the program may be in the College of General Studies off-campus courses or in other approved institutions of higher learning. The candidate is not required to pursue his program of study continuously. On request, a leave of absence is granted for a period not to exceed three years.

THE DEGREE OF DOCTOR OF EDUCATION

The requirements for the degree of Doctor of Education cannot be stated in semester hours, but they consist in general of at least two full years of work beyond the degree of Master of Arts in Education or the equivalent. The programs of study are designed to prepare students for administrative or supervisory positions, the teaching of education in normal schools or colleges, the teaching of an academic subject in schools or colleges, or for specialized types of educational service. The work is given a practical rather than a theoretical bent, and emphasizes the mastery and application of subject matter, both in the study requirements and in the dissertation. Special emphasis is placed upon the professional success of the candidate.

The candidate's program of study depends for the most part upon his previous educational background and his professional objective. Opportunities are provided for study leading to the following professional objectives:

School Superintendent
Secondary School Principal
Elementary School Principal
Supervisor

Director of Guidance
Director of Curriculum Development
Professor of Education
Specialist in Educational Research

QUALIFICATIONS OF THE APPLICANT

The candidate for the degree of Doctor of Education must have completed (1) graduate work in fields prerequisite to his objective, equivalent to that required for the degree of Master of Arts in Education in The George Washington University, and (2) at least three years of successful educational experience.

ADMISSION TO CANDIDACY

To be admitted to candidacy for the degree the applicant must be accepted by the Committee on Graduate Studies on the basis of an examination which will usually include the following: (1) a written examination involving problems related to the applicant's background; (2) a scholastic-aptitude test; (3) an oral examination.

CONSULTATIVE COMMITTEE

If the applicant is accepted as a candidate, his consultative committee in cooperation with the candidate, will (1) determine the candidate's fields of study, in each of which the candidate must pass a written examination at least eight months before he presents himself for the degree; (2) formulate a list of courses and readings that will assist him in preparing for these examinations; and (3) designate the tools of investigation that will be needed by the candidate in the prosecution of his study. These tools may include one foreign language or more, statistical methods, historical criticism, or any others considered essential by the committee. An examination in the tools designated must be passed by the candidate before he takes his final comprehensive examination.

THE DISSERTATION

When the candidate has satisfied the requirements of his consultative committee, the committee is dissolved. A member of the Faculty, in whose field the topic of the dissertation falls, is then appointed to serve as the candidate's adviser on his dissertation and in his field of specialization and to recommend him to the Dean for the final oral examination when, in his judgment, the candidate's dissertation is acceptable.

No later than the date specified in the University calendar the candidate shall submit to the Dean three copies of his dissertation together with a fourth copy of the summary. Printed copies of detailed regulations regarding the form and reproduction of the dissertation and its summary (see pages 45-46), are available in the Office of the Dean. The summaries of accepted dissertations will be printed in a numbered issue of the University BULLETIN. The successful candidate for the doctorate

is required, before receiving his degree, to pay a fee to cover the expense of printing the summary of the dissertation.

THE FINAL EXAMINATION

At least three weeks before the degree is to be conferred the candidate must pass an oral examination on his dissertation and on his field of specialization before a committee of the Faculty appointed by the Dean, supplemented by two experts from outside the University. This examination is open to the public and all are privileged to question the candidate. The Dean, or a member of the Faculty designated by him will preside at this examination.

READING CLINIC

To help children and adults with reading difficulties the University operates a diagnostic and corrective reading clinic. Children may be referred by principals, teachers, or parents. Adults may apply by telephone.

To arrange for a clinical examination of reading status, address The George Washington University Reading Clinic, 2018 I Street, NW., or telephone STerling 3-0250, Extension 491, for an appointment. The Clinic is open for appointments Monday through Friday, from 9:00 A.M. to 5:00 P.M.

Fees.—The fee for individual diagnosis is \$30; for individual instruction, \$4 a lesson; for semi-individual instruction, \$3 a lesson; for instruction in small groups with common reading difficulties, \$2.50 a lesson; for materials, \$4. All fees are payable in advance at the Office of the Cashier.

SPECIAL CURRICULA

The School of Education provides special curricula for liberal arts graduates, housewives, and retired military personnel who wish to prepare for teaching. It also provides a wide range of courses of interest to (1) emergency teachers who wish to qualify for teaching certificates and (2) teachers who wish to renew licenses.

REGULATIONS

Students in the School of Education are subject to, and are expected to familiarize themselves with, the general University regulations stated in the University catalogue.

ADMISSION

An applicant for admission must obtain from the Office of the Director of Admissions an application blank which he must fill out completely and return with the application fee of \$10 if applying as a degree candidate, \$5 if applying as a nondegree candidate.

Two recent photographs with signature of the applicant must accompany the blank.

Applications should be filed by July 1 for the fall semester, January 1 for the spring semester, and May 1 for the Summer Sessions.

ENTRANCE REQUIREMENTS

For the Bachelor's Degrees

Bachelor of Arts in Education, Bachelor of Science in Home Economics, Bachelor of Science in Physical Education.—An Associate in Arts degree based on the Education, Home Economics, or Physical Education curriculum in the Junior College (see pages 10-11, 13, 14-16), or the equivalent from another accredited higher institution, or a certificate of graduation from an approved normal school or the equivalent is required. The applicant must have a quality-point index of 2.00 (average grade of C) counting *Incomplete* grades as F. He must have demonstrated a genuine interest in teaching, possess personality traits that give promise of success as a teacher, and have an interview in the Office of the School of Education.

Applicants who have graduated from the Junior College or have attained equivalent standing at other accredited institutions, but have not completed satisfactorily all of the courses included in the Junior College curriculum which is prerequisite to the School of Education program contemplated, may be admitted to the School of Education with deficiencies. Such deficiencies must be removed before graduation and in the sequence prescribed by the student's adviser.

ADVANCED STANDING

An applicant for advanced standing may be considered for admission upon presentation of satisfactory credentials from an accredited institution of higher learning. The student must be in good standing as to scholar-

ship and conduct and must be eligible to return to the previously attended institution in the semester for which he seeks admission to this University. Credit for transferred work will be assigned by the School of Education to the extent that it meets the requirements for the degree sought at this University and subject to the University regulations concerning satisfactory subsequent work.

For the Master's Degree

Master of Arts in Education.—To be admitted to candidacy for the degree of Master of Arts in Education the applicant must: (1) hold a Bachelor's degree from an accredited institution; (2) have an undergraduate quality-point index of 2.50 or above (C + average); (3) have demonstrated a genuine interest in teaching; (4) be in possession of personality traits that give promise of better-than-average success as a teacher.

To be admitted to candidacy in programs designed to prepare for service in guidance and administration two years of successful teaching experience are prerequisite. Candidates who have had no professional courses must satisfactorily complete the required undergraduate professional courses, including Observation and Student Teaching in Secondary Schools, in addition to graduate course requirements.

ADVANCED STANDING

Graduate work completed in other accredited institutions of learning may be credited toward the Master's degree, but a minimum of 30 semester hours must be completed in the School of Education of The George Washington University. Not more than 9 semester hours of the minimum 30-hour requirement may be taken in off-campus courses.

Advanced courses completed in excess of the requirements for the Bachelor's degree in this University may be credited toward the Master's degree to the extent of 12 semester hours, provided the work fits in with the student's plan of specialization and is approved in writing by the Dean before being undertaken.

In determining advanced standing at the time of admission or re-admission to Master's candidacy at this University, graduate work completed more than three years previously is not counted.

For the Advanced Professional Certificate

A Bachelor of Arts degree in Education or Bachelor of Science degree in Physical Education from the School of Education, or the equivalent from another institution of higher learning; a Master's degree, from an accredited institution, at least two years of successful teaching experience, and a permanent teaching or administrative license are required. The applicant who is unable to meet the admission requirements may be

admitted with deficiencies to be met by satisfactorily completing prerequisites in addition to the specified program of graduate study. Each applicant must be interviewed by a member of the Faculty of the School of Education. The applicant seeking to qualify for a higher level in the local salary scale must have his program approved by the appropriate representative of the school system employing him.

ADVANCED STANDING

Appropriate graduate work completed in other accredited higher institutions may be credited toward the requirements for the Certificate. In determining advanced standing at the time of admission or readmission to Certificate candidacy, graduate work completed more than three years previously is not counted.

For the Degree of Doctor of Education

The candidate for the degree of Doctor of Education must have completed graduate work in fields prerequisite to his objective, equivalent to that required for the degree of Master of Arts in Education in The George Washington University, and at least three years of successful educational experience.

REGISTRATION

Before a student may be admitted to registration he must have satisfied the Office of the Director of Admissions that he is qualified to enter the University.

A student who has previously matriculated in the University, but who has not been in attendance during the semester prior to registration, should file an application for readmission in advance of registration.

Registration is for the semester unless otherwise indicated on the registration paper. No registration is accepted for less than a semester or one summer session.

A student may not register concurrently in The George Washington University and another institution without the permission of the Dean. Allowance of credit for work done concurrently will be at the discretion of the Committee on Admission and Advanced Standing.

FEES AND FINANCIAL REGULATIONS

By authorization of the Board of Trustees, the following fees have been adopted:

TUITION FEES

For each semester hour for which the student registers (except work taken by a candidate for a Doctor's degree)..... \$22.00

For the degree of Doctor of Education	
For work* leading to and including the general examination.....	660.00
For work leading to and including the final examination.....	660.00

ADDITIONAL COURSE FEES

In certain courses additional fees, such as laboratory and material fees, are charged as indicated in the course descriptions. These fees are charged by the semester and, unless otherwise indicated, may be defrayed in three payments when the tuition is paid in this manner. Breakage of apparatus is charged against the individual student. When breakage is in excess of the normal amount provided for in the laboratory fee the individual student will be required to pay such additional charges as are determined by the department concerned.

GRADUATION FEES:

Wherein a degree is conferred.....	25.00
Wherein an Advanced Professional Certificate is conferred.....	25.00
	6.00

FEE FOR BINDING MASTER'S THESIS..... 85.00

FEE FOR PRINTING SUMMARY OF DOCTORAL DISSERTATION.....

SPECIAL FEES

Application fee, charged each applicant for admission as a degree candidate, nonrefundable	10.00
Application fee, charged each applicant for admission as a nondegree candidate, nonrefundable	5.00
Application for Transfer fee, charged† each applicant for transfer within the University from one college, school, or division to another, except in cases of normal progression, nonrefundable.....	5.00
Admission tests (when required).....	0.00
Late-registration fee, charged each student who fails to register within the designated period.....	5.00
Change fee, charged each student for each change in program involving one or more than one course.....	2.00
Withdrawal fee, charged each student who preregisters and withdraws prior to the regular registration.....	5.00
Service fee, charged each student for late payment of tuition (see "Payment of Fees").....	2.00
Reinstatement fee, charged each student who is reinstated after suspension for delinquency in fees.....	5.00
Residence fee, charged each student wishing to maintain "in residence" status during any semester of absence from the University or after completion of tuition requirements.....	25.00
For special physical examination.....	2.00
For each examination to qualify for advanced standing and for each special examination	5.00
Laboratory checkout fee, charged each student in chemistry courses who fails to check out of the laboratory by the time set by the instructor	1.00
Transcript fee, charged for each transcript of record after the first	1.00

* This fee does not cover the cost of tuition for elementary courses (numbered 1-1000)
† Payable at the time of application for transfer or readmission.

Registration in the University entitles each student to the following University privileges; (1) the issuance of one certified transcript of record, if and when desired; (2) the services of the Placement Office; (3) the use of University library facilities, except as otherwise designated; (4) gymnasium privileges; (5) admission to all athletic contests, unless otherwise specified; (6) subscription to the *University Hatchet*, the student newspaper; (7) admission to University debates; (8) medical attention and hospital services as described in the General Catalogue. These privileges, with the exception of the issuance of transcripts, terminate, and a student is no longer in residence, when he withdraws or is dismissed from the University.

PAYMENT OF FEES

All fees are payable at the Office of the Cashier, 725 Twenty-first Street NW. No student is permitted to complete registration or to attend classes until all fees are paid. Fees for each semester are due and payable in advance at the time of registration.

In exceptional cases, subject to the approval of the Treasurer, the student may sign a contract for semester charges, except for fees payable in advance, permitting payments as follows:

Fall Semester.—One-third at the time of registration; one-third on November 2; one-third on December 1.

Spring Semester.—One-third at the time of registration; one-third on March 1; one-third on April 1.

A student who fails to meet payments when due, but who pays his fees from the fourth to the fifteenth, inclusive, of the month in which payment is due, is charged a service fee of \$2. A student who fails to meet payments by the fifteenth of the month in which payment is due will be automatically suspended and may not attend classes until he has been officially reinstated and has paid all accrued fees and a reinstatement fee of \$5.

A student suspended for failure to meet payments when due may not be reinstated for the semester after two weeks from the date of suspension. Applications for reinstatement are to be made to the Office of the Cashier.

An auditor pays all fees chargeable to the student registered for credit except the late-registration fee.

WITHDRAWALS AND REFUNDS

Application for withdrawal from the University or for change in class schedule must be made in person or in writing to the Dean. Notification to an instructor is not an acceptable notice.

In authorized withdrawals and changes in schedules, financial adjustments will be made as follows:

Fall Semester.—Withdrawal dated on or before October 30, cancellation of two-thirds of tuition charges; withdrawal dated on or before November 30, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to November 30.

Spring Semester.—Withdrawal dated on or before February 29, cancellation of two-thirds of tuition charges; withdrawal dated on or before March 31, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to March 31.

In no case will a refund be made of the first third of the total tuition charges unless the registration is in advance and is cancelled before the regular registration day. In this case a withdrawal fee of \$5 is charged and tuition fees refunded. In no case will tuition be reduced or refunded because of nonattendance upon classes.

Payment applies only to the semester for which a registration charge is incurred and in no case will this payment be credited to another semester.

Any student in chemistry who fails to check out of the laboratory on or before the date set by the instructor, unless excused by the instructor, will be charged a checkout fee in the amount of \$3. A student who drops a course before the end of the semester must check out of the laboratory at the next regular laboratory period.

Any student enrolled in the Air Force ROTC who fails to turn in uniforms, equipment, and textbooks, on separation from the Corps, will be charged the value of the missing items.

Authorization to withdraw and certification for work done will not be given a student who has not a clear financial record.

AMOUNT OF WORK

Fifteen to 17 semester hours constitute a normal program. A student with a quality-point index of 3.00 or higher, may, with the permission of the Dean, enroll for 18 or 19 hours. No student may enroll for more than 19 hours, except by permission of the Committee on Scholarship.

A student with extracurricular employment of 15 hours or less a week is permitted to carry a normal program of college work.

A student with extracurricular employment of from 16 to 25 hours a week may enroll for 12 or 13 hours. Such a student with a quality-point index of 3.00 or higher may, with special permission of the Dean, enroll for 15 or 16 hours.

A student with extracurricular employment of from 26 to 34 hours a week may enroll for 9 or 10 semester hours. Such a student with a quality-point index of 3.00 or higher may, with special permission of the Dean, enroll for 12 or 13 hours.

A student with extracurricular employment of 35 hours or more a week

may enroll for 6 or 7 hours. Such a student with a quality-point index of 3.00 or higher may, with special permission of the Dean, enroll for 9 or 10 hours.

A student who increases his hours of employment subsequent to registration or at any time during a semester is required to report that fact immediately to the Dean so that his program may be brought within the limitations outlined above.

ATTENDANCE

A student is not permitted to attend classes until registration has been completed and fees due have been paid. Regular attendance is required. A student may be dropped from any course for undue absence.

PROBATION

An undergraduate student who fails to maintain a quality-point index of at least 2.00 will be placed on probation. A student remains on probation as long as his quality-point index is below 2.00, or until his probation is removed by the Committee on Scholarship.

SUSPENSION

An undergraduate student on probation who fails to raise his quality-point index to 2.00 within the time specified by the Committee on Scholarship may be suspended. An undergraduate student who fails to make passing grades in one-half or more of a minimum of 16 semester hours of course work may be suspended.

A student who has been suspended, either for delinquency in payment of fees or for any other reason, is not permitted to attend classes during the period of suspension.

A student who has been suspended for poor scholarship may within ten days appeal his case to the Committee on Scholarship through the Dean. If the case appears to be remediable and the student appears likely to improve in his scholarship thereafter, the Committee may readmit him on probation. A student who has been denied readmission on probation may petition the Committee on Scholarship through the Dean for readmission after the lapse of a calendar year. A student who has been suspended twice will not be readmitted.

WITHDRAWAL

Withdrawal from a course or from the University, without academic or financial penalty, requires the permission of the Dean. Permission to withdraw from the University will not be granted a student who has not a clear financial record.

Withdrawal between October 30 and the end of the fall semester and between February 29 and the end of the spring semester is permitted only in exceptional cases.

All charges for courses dropped without the approval of the Dean must be met by the student. Reporting the dropping of a course to an instructor does not effect its discontinuance.

CHANGES IN PROGRAM OF STUDIES

Changes within the School.—A student may not change or drop courses (see "withdrawals", above) or change his status to that of auditor except with the approval of the Dean, upon presentation of adequate reasons for such changes.

Change from one section to another of the same course may be made with the approval of the Dean and the department concerned.

Change from one major subject to another within the same college or school may be made with the approval of the Dean. All requirements specified in the course of study to which the change is made must be satisfied.

Transfer within the University.—Transfer from one college, school, or division to another may be made only with the approval of the deans concerned. Application for transfer must be made to the Director of Admissions on the proper form provided by his office.

Students wishing to transfer from the Division of University Students or the Division of Special Students to the School of Education should note that a maximum of 45 semester hours will be accepted in transfer.

In order to provide degree candidates with proper academic counsel and the benefits of integrated programs of study, the faculties of the various schools and colleges have established minimum residence requirements and regulations with regard to supervision of the work done in the student's major field. In addition, various special regulations regarding course sequence, selection of electives, and advisory approval of programs apply in particular curricula. Students transferring within the University are advised to study carefully the graduation requirements and to note that in all undergraduate divisions 30 semester hours including at least 12 semester hours in the major field, must be completed in residence in the school or college from which the degree is sought. Upon transfer the student should consult the dean concerned and understand clearly all the requirements he must fulfill.

SUMMER SCHOOL CREDIT

A student who plans to attend summer school sessions at another institution with the intention of having credits so obtained apply toward graduation from this University must first secure the written approval of

the Dean. In no event will such credits be recognized to an amount in excess of that which might be earned in a similar period in this institution.

GRADUATION REQUIREMENTS

To be recommended for graduation a student must have met the admission requirements of the college or school in which he is registered, completed satisfactorily the scholarship, curriculum, residence, and other requirements for the degree for which he is registered, and be free from all indebtedness to the University.

Application for Graduation.—Application for a degree must be filed in the Office of the Registrar at the time of registration for the last semester of the senior or final year.

Scholarship.—The undergraduate student must maintain a quality-point index of at least 2.00.

Candidates for the Master's degree and the Advanced Professional Certificate must obtain at least a grade of *Satisfactory* (*B* level) on each course of the required minimum graduate program and must maintain a quality-point index of at least 2.50 on all prerequisite courses.

Residence.—The undergraduate student and the Master's candidate must complete a minimum of one year or 30 semester hours in residence. Not more than 9 hours of this requirement may be satisfied by off-campus courses. Summer work may be counted in residence, but in no case may the period of residence aggregate less than thirty weeks. Unless special permission is granted by the Dean to pursue work elsewhere, the work of the senior or final year must be completed in residence.

Candidates for the Advanced Professional Certificate must meet a minimum residence requirement of 18 semester hours taken on campus.

Degree candidates are expected to maintain continuous residence by registering for at least one course in each of two of the three terms (fall, spring, summer). Candidates who are unable to enroll for a course but wish to use the library facilities and consult staff members may, with the permission of the Dean, register "in residence" by paying the residence fee. Candidates, who for reasons beyond their control, must temporarily discontinue their studies may be granted leave of absence for one or two terms, on petition to the Dean's Council.

Thesis or Dissertation.—A thesis or dissertation submitted in partial satisfaction of requirements for the Master's or Doctor of Education degrees must be presented in its final form to the Dean no later than the date specified in the Calendar. Three complete copies of each are required. It is the responsibility of the candidate for a graduate degree to obtain from the Dean a printed copy of the regulations governing the

styling and reproduction of the thesis and dissertation, which are rigidly enforced.

Attendance and Conduct.—The University reserves the right to refuse to confer a degree upon a candidate whose attendance or conduct has been unsatisfactory.

Presence at Graduation.—A candidate is required to be present at the graduation exercises unless written application for graduation in absentia is approved by the Dean.

THE LIBRARY

A student registered in the University is entitled to the reference use of the University Library. The Student Identification Card, issued upon the payment of fees, must be presented as identification.

Library books, with the exception of those in the Law and Medical collections, may be drawn for home use for a period of two weeks. Any book which does circulate is subject to recall by the Librarian at any time. Reserve books and periodicals for collateral reading must be used in the reading rooms when the Library is open. With special permission they may be drawn for overnight use when the Library closes. A fine of twenty-five cents will be charged for the first hour or fraction of an hour and five cents for each hour or fraction thereafter that a reserve book is overdue. Grades of a student will be withheld until his library record is clear.

HOURS

The University Library is open from 9:00 A.M. to 10:00 P.M. each class day (Saturday 9:00 A.M. to 5:00 P.M.), and from 2:00 to 6:00 P.M. on Sunday.

RIGHT TO DISMISS STUDENTS

The right is reserved by the University to dismiss or exclude any student from the University, or from any class or classes, whenever, in the interest of the student or the University, the University Administration deems it advisable to do so.

RIGHT TO CHANGE RULES

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.

PROPERTY RESPONSIBILITY

The University is not responsible for the loss of personal property in any University building. A "Lost and Found" Office is maintained in the Student Union.

COURSES OF INSTRUCTION

The University reserves the right to withdraw any course announced.

EXPLANATION OF COURSE NUMBERS

First-Group courses.—Courses numbered from 1 to 100 are planned for students in the freshman and sophomore years. With the approval of the adviser and the Dean, they may also be taken by juniors and seniors. In certain instances, they may be taken by graduate students to make up undergraduate deficiencies or as prerequisite to advanced courses, but they may not be credited toward a higher degree.

Second-group Courses.—Courses numbered from 101 to 200 are planned for students in the junior and senior years. They may be credited toward higher degrees only when registration for graduate credit has been approved before the mid-point of the course by the Dean of the School of Education and by the officer of instruction concerned, and when the completion of additional work has been certified by the officer of instruction.

Third-group courses.—Courses numbered from 201 to 300 are planned primarily for graduate students. They are open, with the approval of the officer of instruction, to qualified seniors.

INDICATION OF THE AMOUNT OF CREDIT

The number of semester hours of credit given for the satisfactory completion of a course is indicated in parentheses after the name of the course. Thus, a year course giving three hours of credit each semester is marked (3-3), and a semester course giving three hours of credit is marked (3).

DEPARTMENT OF EDUCATION

Courses offered by the Department of Education are of two types: those designed for the preservice education of candidates and those planned for the inservice education of teachers, counselors, and administrators.

Preservice courses devote two or three hours a week to lecture and discussion supplemented by a minimum of two hours a week of related field work. A clinical approach to the study of educational problems is used—lectures and discussions revolving around observed practices.

Inservice courses meet once a week for a two-hour period. Class work is supplemented by extensive reading assignments, the preparation of re-

ports, and field work. A student enrolled in one of these courses should plan to devote not less than seven hours a week, exclusive of class time, to the work of the course.

Ample opportunity is provided to study teaching or administrative problems of special interest. To enable students to consult with instructors regarding individual problems, a conference hour is scheduled immediately before or after the class period.

Only the courses designed to provide professional information and skills are listed below. For courses needed for general education or teaching-field preparation, see the general catalogue. In addition to courses offered in the Department of Education a number of professional courses for teachers are offered in the departments of Psychology, Speech, and Statistics. These are listed below together with courses offered by the Department of Education.

Whenever possible, the exact hour of class meeting is stated. Hours for classes not yet scheduled may be found in the Schedule of Classes for the semester concerned.

FIRST GROUP

Education A *Reading Clinic*

Coleman and Staff

Diagnosis of reading difficulties; individual or group lessons without academic credit. Fee: for diagnosis, \$30; for individual lesson, \$4; for semi-individual lesson, \$3; small group lesson, \$2.50; material fee, \$4.

Psychology 22 *Introduction to Educational Psychology* (3)

Lindley, Faith

Fall—evening; spring—morning; summer 1959.

Consideration of individual and group differences, adjustments, and the psychology of learning in relation to education and training.

Psychology 29 *Child Psychology* (3)

E. Johnson

Fall—evening; spring—morning; summer 1959.

A genetic approach to the study of the child. Special emphasis is placed on the socialization process, learning, and the child's view of the world.

Statistics 53 *Introduction to Statistics in Psychology and Education* (3)

The Staff

Lecture (2 hours), laboratory (2 hours).

Fall—lecture—morning and evening, laboratory—afternoon and evening, spring—morning; summer 1959.

Sources of data, tabulation, charts and graphs, averages, dispersion, quartiles, and percentiles, raw scores and derived scores, profiles, norms and their use, frequency distributions, intelligence and other quotients.

reliability and validity of tests, normal curve, correlation, elementary sampling, statistical error, limitations of statistics. Prerequisite: one entrance unit in algebra. Laboratory fee, \$9.

SECOND GROUP

Statistics 105 *Statistics in Psychology and Education* The Staff
(3)

Spring: lecture (2 hours), laboratory (2 hours)—morning.

Advanced study of statistical techniques necessary for an application of statistics in research problems. Analysis of variance, correlation techniques, chi-square applications, and sampling theory. Applications to specific problems utilizing case method of study in so far as possible. Original work is required of each student. Prerequisite: Statistics 53. Laboratory fee, \$9.

Education 109-10 *Human Development, Learning, and Teaching* (3-3) Baker, Detwiler

Lecture (2 hours), conference (1 hour), field work (2 hours)—as arranged.

First half—Fall: section A: M 1:10-3 p.m., section B: W 6:10-9 p.m.; summer 1959.

Second half—Fall: 1:10-3 p.m.; spring: section A: M 1:10-3 p.m., section B: W 6:10-8 p.m., summer 1959.

For the general student as well as the prospective teacher. *First half*: nature of human growth, development, and learning, illustrated by observation of children in learning situations. *Second half*: nature of teaching based upon principles of human growth, development, and learning, illustrated by observation of school situations.

Education 111 *Methods in Elementary Education* (12) Baker and Staff

Fall—Monday through Friday 9-12 A.M.

For seniors in the elementary school curriculum. Methods, materials, appraisals, and field experiences in elementary schools. Problems and procedures in teaching the language arts (including reading, literature for children, oral and written expression, spelling, and handwriting), arithmetic and science, social studies. Planning units of work, general classroom procedures, and evaluation of pupil progress. Observation and participation two mornings a week. Prerequisite: Education 109-10 and 121-22.

Education 112 *Guidance in Elementary Schools* (3) McCauley

Fall—T 3:10-5 p.m.

Scope, needs, services to students, selection and construction of teacher-made tests, interpretation of tests for evidence purposes. Prerequisite: Education 109-10, 121-22.

Education 113 *Elementary School Art* (3)

Nowlin

Fall—M 6:10-9 P.M., field work—as arranged; spring—T 6:10-9 P.M., field work—as arranged; summer 1959 (Crump).

For undergraduates in the elementary school curriculum. Materials and methods. Prerequisite: Psychology 1 and 22. Material fee, \$4.50.

Education 114 *Elementary School Music* (3)

Reed

Fall—Th 7:35-9:35 P.M., field work (2 hours)—as arranged.

For undergraduates in the elementary school curriculum. Materials and methods. Prerequisite: Psychology 1 and 22.

Education 115 *Teaching Reading in the Elementary School** (3)

Hanigan

Spring—W 7:10-9:10 P.M., field work (2 hours)—as arranged; summer 1959.

A basic course in methods, techniques, materials, and activities essential to a good elementary school reading program. Prerequisite: Education 109-10 and 121-22 or teaching experience.

Education 116 *Elementary School Social Studies** (3)

Fall—F 7:10-9:10 P.M., field work (2 hours)—as arranged.

For teachers. Content, methods, materials, and activities essential in the elementary school curriculum. Prerequisites: Education 109-10 and 121-22 or teaching experience.

Education 117 *Elementary School Science** (3)

St. Cyr

Spring—F 6:10-9 P.M., field work (2 hours)—as arranged; summer 1959.

For teachers. Content, methods, materials, and activities essential in the elementary school curriculum. Prerequisite: Education 109-10 and 121-22 or teaching experience.

Education 120 *Elementary School Arithmetic** (3)

Spring—Th 7:35-9:35 P.M., field work (2 hours)—as arranged; summer 1959.

For teachers. Content, methods, materials, and activities essential in the elementary school curriculum. Prerequisite: Education 109-10 and 121-22 or teaching experience.

Education 121-22 *Society and the School* (3-3)

St. Cyr

Lecture (2 hours), conference (1 hour), field work (2 hours)—as arranged.

First half—Fall: section A: W 1:10-3 P.M.; section B: M 6:10-8 P.M.

* This course may not be taken by students who have completed or plan to enroll in Education 113.

summer 1959. *Second half*—Fall: Th 1:10-3 p.m. (Angel); spring: section A: W 1:10-3 p.m.; section B: M 6:10-8 p.m.; summer 1959 (Angel).

For the general student as well as the prospective teacher. *First half*: the historical and sociological development of education at local, national, and international levels; cooperation of the school with other community agencies. *Second half*: organization and operation of schools; principles and functions; role of the teacher.

Psychology 121 *Educational Psychology* (3) Faith

Fall—as arranged; spring—as arranged.

Advanced course in educational psychology. Admission by permission of the instructor.

Education 128 *Children's Literature** (3) Walker

Spring—M 7:10-9:10 p.m., field work (2 hours) as arranged; summer 1959.

For teachers.—Exploring and evaluating the newer books for children and the children's classics, understanding the contribution of literature in child development, appreciating children's original expressions. Prerequisite: Psychology 1 and 22.

Psychology 129 *Introduction to Counseling and Guidance* (3) Dreese

Fall—evening; summer 1959.

A survey of the basic principles, techniques, and procedures as applied to vocational, educational, and personal counseling.

Education 131 *Common Teaching Skills* (3) Detwiler

Fall—Th 12:30-1:45 p.m.; spring—MTh 4:30-5:45 p.m.

For seniors in the secondary school curriculum. Course, unit, and lesson planning; practical techniques used in connection with motivation, the assignment, group procedures, directing study, individual differences, evaluation, clerical routines, discipline, the homeroom, activity sponsorship, public relations. Prerequisite: Education 109-110 and 121-22.

Psychology 131 *Psychological Tests* (3) Hunt, Hill

Fall—morning; spring—evening; summer 1959.

A survey of psychological tests and their more common uses in business, industry, government, law, medicine, and education. Material fee, \$7.

* This course may not be taken by students who have completed or plan to enroll in Education 111.

Education 133-34 *Observation and Student Teaching in Secondary Schools* (3-3 to 6) Detwiler

A year course; credit is not given for the first half until the second half is completed.

133A: fall—as arranged; 133B: spring—as arranged. 134A and 134B: spring—as arranged.

For seniors in the secondary school curriculum. Section B is for students enrolled in the intensive program. Education 134 student-teaching fee, \$50. Admission by permission of the instructor. Prerequisite: Education 109-10 and 121-22.

Education 135 *Student Teaching in Elementary Schools* (9) Baker, McCauley

135A, 135B, and 135C: spring—as arranged.

For seniors in the elementary school curriculum. Education 135 student-teaching fee, \$50. Admission by permission of the instructor. Prerequisite: Education 109-10 and 121-22.

Psychology 141 *Leadership, Group Behavior, and Student Life* (3) Faith

Fall—morning.

A survey of the foundations of leadership, of the factors which underlie effective participation in group activities, and of the interrelations between the student and his university.

Psychology 144 *Personnel Psychology* (3) Hubbard, Mosel

Fall—evening; spring—evening; summer 1959.

The applications of psychology to personnel work in education, business, industry, and government.

SPECIAL METHODS COURSES*

To be elected in the senior year after substantial preparation in the teaching fields concerned by the students in the secondary school curriculum. Course requirements and hours of credit vary with license requirements. Practices of successful teachers are studied and actual teaching content as found in current texts and courses of study is reviewed.

Education 136 *Teaching English* (2 to 4) Lumsden

Spring—M 7:10-9:10 P.M., field work (2 hours)—as arranged

Prerequisite*: eighteen semester hours in English.

Education 138 *Teaching Social Studies* (2 to 4) Whipple

Spring—T 7:15-9:15 P.M., field work (2 hours)—as arranged

Prerequisite*: twenty-four semester hours of social studies.

* Prerequisite to all special methods courses: Education 109-10, 121-22, and 141. Actual prerequisites are stated under each course.

- Education 140 *Teaching Mathematics* (3) Brown
 Spring—T 7:35-9:35 P.M.
 Prerequisite*: Mathematics through calculus.
- Education 144 *Teaching Science* (2 to 4) Koelsche
 Spring—Th 7:35-9:35 P.M., field work (2 hours)—as arranged.
 Prerequisite*: twenty-four to forty semester hours of science.
- Education 146 *Teaching Foreign Languages* (2 to 4) McSpadden
 Spring—T 5:10-7 P.M.
 Prerequisite*: eighteen semester hours of one foreign language.
- Education 148 *Teaching Home Economics* (2) Kirkpatrick
 Spring—as arranged.
 Prerequisite*: thirty semester hours of Home Economics.
- Education 150 *Teaching Business Subjects* (2) Shott
 Spring—as arranged.
 Prerequisite*: thirty semester hours of business education.
- Speech 175-76 *Speech Correction* (3-3) Pettit
 Academic year—evening.
 A study of the causes of the disorders of speech with emphasis on methods in diagnosis and treatment of defective speech. Admission by permission of the instructor.

THIRD GROUP†

- Education 201-2 *Learning and Teaching* (3-3) McCauley
 Lecture (2 hours), conference (1 hour), field work (2 hours)—as arranged.
 Academic year—section A M 7:10-9:10 P.M., section B Th 7:15-9:35 P.M.
 For graduate students. *First half*: nature of learning approached through the study of classroom situations. *Second half*: nature of teaching approached through observation of classroom situations.
- Education 203-4 *Comparative Education* (3-3) —————
 Academic year—F 7:10-9:10 P.M.
 Comparison of foreign educational systems with those of the United States, particularly those of Russia, West Germany, Denmark, Switzerland, France, the British Isles, Canada, and Australia.

* Prerequisite to all special methods courses: Education 139-140, 141-142, and 143. Additional prerequisite courses are placed under each course.
 † A degree from an accredited institution is prerequisite to all third-group courses.

Education 205-6 *The Curriculum*† (3-3)

St. Cyr

Academic year—Th 7:35-9:35 P.M.

For experienced teachers. *First half:* curriculum foundations and issues; comparison of curriculum patterns. *Second half:* principles and procedures in curriculum development; group consideration of student problems.

Education 207 *Curriculum Materials*† (3)

St. Cyr

Summer 1959.

For experienced teachers. Construction of courses of study, resource units, classroom teaching aids, and inexpensive materials; direct application to students' own situations.

Education 209 *Child Growth and Development* (3)

McCauley

Fall—S 9 10-11 A.M.

An interdisciplinary approach to child development taking into account such factors as society and culture, socialization, and socializing agents with particular emphasis on the home and school.

Education 210 *Adolescent Growth and Development* (3)

McCauley

Spring—S 9:10-11 A.M.; summer 1959.

A consideration of physical, intellectual, and cultural backgrounds of adolescence with particular emphasis on social development, adjustment to organized society, educational development, and adjustment to school and home relationships.

Education 211 *Evaluation in Education*† (3)

McCauley

Not offered 1959-60.

Concept of evaluation, relationship between evaluation of ends and means, steps involved in the evaluation of learning outcomes. As the course progresses each student develops solutions for evaluation problems related to his work situation.

Education 212 *Educational Measurement*† (3)

McCauley

Summer 1959.

Basic measurement techniques; construction, selection, administration, and interpretation of objective and essay-type examinations; statistical analysis of test results; laboratory experiences in the use of test instruments.

Education 213-14 *History of Education* (3-3)

Jarman

Academic year—T 7 35-9 35 P.M.

First half: the European backgrounds of American education. *Second half:* the evolution of the American school system.

† Prerequisite: adequate professional preparation.

Education 215 *Education of Exceptional Children** (3) LaBue
Not offered 1959-60.

For classroom teachers. A survey of current problems in the education and guidance of exceptional pupils. Nature and needs of those physically, mentally, or emotionally handicapped; needs of the gifted. Resources for help in correction, diagnosis, therapy, education, and guidance.

Education 216 *Education of Slow-learning Children** (3) LaBue

Spring—Th 7:35-9:35 P.M.; summer 1959.

Identification, nature, and needs of slow-learning elementary and junior high school children. Emphasis on diagnosis and treatment of learning difficulties.

Education 217-18 *Contemporary Problems in Education** (3-3) Jarman

Academic year—M 7:10-9:10 P.M.; summer 1959—Education 217 (3).

First half: designed to help students formulate a personal philosophy of education. Second half: social foundations of education—a study of the forces that shape the policies and offerings of the school.

Education 219 *Elementary School Classroom Procedures** (3) LaBue

Summer 1959.

Current classroom practices with particular emphasis on ways of planning, unit teaching, techniques in discipline, individual and group evaluation techniques, resources for learning, providing for individual differences.

Education 221 *Early Childhood Education** (3)

Not offered 1959-60.

For experienced teachers. Emphasis on methods, materials, and learning experiences designed to meet the developmental needs of kindergarten and primary-grade children.

Education 223-24 *Reading Problems** (3-3) Coleman

Academic year—W 7:10-9:10 P.M.

For experienced teachers. Study of reading difficulties on elementary and secondary school levels; application of clinical procedures and techniques in solving classroom problems.

Education 225 *Elementary School Reading* (3) Coleman

Summer 1959.

Developmental and remedial approaches to reading problems. Demonstrations of diagnostic and corrective techniques used in the Reading Clinic.

* Prerequisite: adequate professional preparation.

Psychology 225 Seminar: Mental Hygiene (3)

Hunt

Fall—evening; summer 1959.

A study of mental health problems with special attention to programs of prevention.

Psychology 226 Seminar: Clinical Psychology of Childhood and Adolescence (3)

E. Johnson

Spring—evening.

A survey of behavior and personality disorders.

Education 227 Basic Issues in Elementary Education (3)

LaBue

Fall—T 7:35-9:35 P.M.

A consideration of basic issues in the purposes, organization, and conduct of elementary education. Emphasis on the philosophical and psychological roots of fundamental assumptions as they relate to classroom practices.

Psychology 227 Seminar: Counseling and Guidance (3)

Dreese

Spring—evening.

Recent developments and current problems in vocational, educational, and personal guidance in various types of agencies with particular reference to education. Prerequisite: educational or psychological measurements and Psychology 129 or the equivalent.

Education 228 Instructional Areas in Elementary Education (3)

LaBue

Spring—T 7:35-9:35 P.M.

Critical appraisal of the objectives, organization, content, and teaching methods in the language arts, arithmetic, social studies, science, arts, and crafts, health and physical education.

Psychology 228 Seminar: Techniques of Counseling (3)

Dreese

Spring—evening.

An intensive study of the educational and psychological processes involved in counseling interviews. Specific types of vocational, educational, and personal counseling problems will be discussed.

Education 229 Administration of Elementary Education* (3)

LaBue

Spring—W 7:10-9:10 P.M.; summer 1959 (Tyler).

For experienced teachers and administrators. Administration as a means of achieving instructional objectives, organizing learning and teaching activities, handling supplies and equipment, maintaining the building, and integrating school and community life. Emphasis upon guide lines to action.

* Prerequisite: adequate professional preparation

Psychology 229 *Seminar: Occupational and Educational Information* (3)

Faith

Spring—evening.

Designed to acquaint vocational and educational counselors with the basic occupational and educational information necessary in counseling. Sources of data and techniques of collecting, analyzing, and disseminating for purposes of guidance.

Education 231 *Secondary School Classroom Procedures** (3)

Giancaspro

Fall—Th 7:35–9:35 P.M.; summer 1959.

Survey of current classroom practices with particular attention to selected topics such as teacher-pupil planning, group procedures, pupil security, initiatory and culminating activities, individual and group evaluation techniques, teaching aids, etc.; review of recent literature.

Psychology 231 *Test Construction* (3)

Hunt

Fall—evening.

The principles underlying test construction; statistical techniques in the construction, evaluation, and standardization of psychological, educational, and vocational tests. Prerequisite: a course in tests and measurements and an elementary course in statistics.

Psychology 232 *Research: Test Construction* (3)

Hunt

Fall—as arranged; spring—as arranged.

Individual projects in construction and evaluation of psychological, educational, or vocational tests. Prerequisite: Psychology 231 and permission of the instructor.

Education 233 *Audio-visual Education** (3)

Spring—W 6:15–9:00 P.M.; summer 1959.

Role of audio-visual materials in learning; selection, evaluation, and use of materials; administrative problems in the care, operation, maintenance, and use of audio-visual materials and equipment. Material fee, \$7.

Psychology 233 *Individual Psychological Testing* (3)

E. Johnson

Fall—afternoon; spring—afternoon.

Instruction and practice in giving the Binet and Wechsler tests. Prerequisite: an elementary course in tests and measurements. Material fee, \$7.

* Prerequisite: adequate professional preparation

Psychology 236 *Seminar: Analysis of the Individual for Purposes of Counseling* (3)

Faith

Fall—evening.

A detailed study of individual analysis techniques with practice in handling such methods. Prerequisite: an introductory course in educational or psychological measurements.

Education 239 *Teaching the Core Curriculum** (3)

St. Cyr

Not offered 1959-60.

An examination and study of classroom teaching procedures appropriate to the core program.

Education 241 *Education of the Gifted** (3)

Spring—F 7:10-9:10 P.M.; summer 1959.

For classroom teachers. Nature and discovery of giftedness; provisions for the gifted in regular classes; experimental projects.

Education 243 *Human Relations in the Classroom** (3)

Marinaccio

Summer 1959.

Principles and practices involved in interpersonal relationships between learner and teacher and among learners.

Education 245 *School and Community** (3)

Angel

Spring—T 7:35-9:35 P.M.

The school as an important member of a team of social agencies that builds the community.

Education 251 *Guidance in Secondary Schools** (3)

Brougher

Fall—M 7:10-9:10 P.M.; summer 1959.

Scope; needs; organization of the program; services to students, the instructional staff, and the administration; personnel needed for the program.

Education 254 *The Junior High School** (3)

Root

Not offered 1959-60.

Purposes, organization, core programs, guidance, developing course of study, extra-classroom activities.

Education 255-56 *Secondary Education** (3-3)

Root

Academic year—T 7:35-9:35 P.M.; summer 1959.

First half: current proposals for the improvement of secondary education. Second half: current problems in each of the subject-matter fields.

* Prerequisite: adequate professional preparation.

Education 259-60 *Secondary School Management** (3-3)

H. Johnson

Academic year—W 5:10-10 P.M.

For experienced teachers and administrators with two years of successful teaching in secondary schools. Management planning, execution, and control; criteria of good management; construction of the master schedule; leadership problems incident to the development of new policies and programs.

Education 263-64 *Employee Training* (3-3)

Root

Academic year—W 7:10-9:10 P.M.

First half: nature and purpose, review of major programs—orientation, supervisory, apprentice, clerical, skills, communication. *Second half:* administrative problems and practices, training media, coordination with other management functions. Prerequisite, adequate professional preparation or two years of experience in employee training.

Education 265-66 *Teaching Secondary School English* (3-3)

Lumsden

Academic year—W 7:10-9:10 P.M.

A refresher course for teachers of English. Discussion of new approaches to high school content. Offered in cooperation with the departments of English and Speech. *First half:* communication skills—structural linguistics, composition, and speech. *Second half:* American and English literature.

Education 267-68 *Teaching Secondary School Social Studies* (3-3)

Whipple

Not offered 1959-60.

A refresher course for teachers of the Social Studies. Discussion of new approaches to high school content. Offered in cooperation with the departments of History, Political Science, Geography, Economics, and Sociology and Anthropology.

Education 270 *Art Education* (3)

Nowlin

Not offered 1959-60.

For experienced teachers. Basic philosophies of contemporary teachers of art; use of visual and tactile media, emphasis upon visual aids, displays, and use of community resources. Designed to increase awareness of the creative process. Prerequisite: Education 113. Material fee, \$4.50.

* Prerequisite: adequate professional preparation.

Education 271 *The Teacher and School Administration** (3)

Fox

Fall—S 9:10–11 A.M.

A survey course for teachers and prospective administrators. Education and world affairs, national agencies, role of the state, local administration, school finance, legal controls, school plant, public support, democratic administrative procedures, improving teaching conditions.

Education 272 *The Teacher and School Supervision** (3)

Fox

Spring—S 9:10–11 A.M.; summer 1959.

Nature, organization, human relationships, and techniques.

Education 273–74 *Teacher Education** (3–3)

LaBue

Academic year—S 11:10 A.M.–1 P.M.

First half: aims, objectives, and basic issues; study of outstanding and experimental programs. *Second half:* recruitment and selection, general education, teaching-field preparation, professional sequences, laboratory experiences.

Education 275 *School Finance** (3)

Hutchins

Not offered 1959–60.

Educational financial theory, practice, and control, including methods of financing.

Education 276 *Seminar: Public Relations in School Administration** (3)

Joy

Summer 1959.

Purposes, gathering materials, disseminating agencies, publicity media, public participation in policy making.

Education 278 *School Law** (3)

Remmlein

Fall—M 7:10–9 P.M.

Sources and scope of school law; legal rights and responsibilities of teachers, pupils, and taxpayers. Other legal problems of major interest to the group.

Education 279–80 *Adult Education** (3–3)

Detwiler, Holden

Academic year—F 7:10–9:10 P.M.; summer 1959—Education 279 (3).

First half: current concepts and objectives, agencies involved, programs on all levels—international through community. *Second half:* the adult as a learner, the teacher of adults, learning-teaching activities, administration of adult education programs.

Education 281 *Group Procedures in Education** (3)

Detwiler

Summer 1959.

Theory, practice, evaluation, and application to all educational levels.

* Prerequisite: adequate professional preparation.

Education 285 *Extra-classroom Activities** (3)

Suber

Summer 1959.

Nature and purposes of selected activities—homeroom, clubs, assemblies, school publications, student council, interscholastic contests; particular attention to sponsorship, participation, finance, and evaluation.

Education 287-88 *Clinical Study of Reading Problems** (3-3)

Coleman

Academic year—S 11:10 A.M.—1 P.M.

For advanced students. Diagnostic and corrective work under supervision of the Reading Clinic. Each student is expected to diagnose and treat pupils who are retarded in reading. Case studies are presented and criticized. Prerequisite: Education 223-24 or the equivalent. Material fee, \$5 a semester.

Education 289-90 *Supervisory Problems in Reading** (3-3)

Coleman

Not offered 1959-60.

For experienced teachers, principals, supervisors, and superintendents. Considers the problems involved in planning, reorganizing, and improving the total reading program, in promoting cooperative effort on the part of the staff toward increasing teaching efficiency.

Education 291 *Planning the School Plant* (3)

Hamon

Spring—M 7:10-9:10 P.M.

Selection of sites; evaluation of existing buildings; utilization of present facilities; adaptation to curricular needs; building, operation, and maintenance problems.

Education 293-94 *Research* (3-3)

The Staff

Academic year—as arranged.

Individual research under the guidance of a member of the staff. Program and conferences arranged with an instructor.

Education 295 *Educational Research Methods and Procedures* (3)

LaBue

Fall—T 5:10-7:10 P.M.; spring—Th 5:10-7:10 P.M.; summer 1959.

Required of all Master of Arts candidates following Plan 2. Knowledge of elementary statistics required.

Education 297 *Reading in Education*

The Staff

Fall—W 5:10-6 P.M.; spring—W 5:10-6 P.M.; summer 1959.

To assist those preparing for the comprehensive examinations. No credit toward degree requirements. Tuition fee, \$22.

* Prerequisite: adequate professional preparation.

Education 299-300 *Thesis* (3-3)

Academic year—as arranged.

Required of all Master of Arts candidates following Plan 1.

The Staff

DEPARTMENTS OF PHYSICAL EDUCATION

The following courses are offered by the Department of Physical Education for Men and the Department of Physical Education for Women. Whenever possible the departments offer lecture courses jointly.

FIRST GROUP

43-44 *Techniques of Physical Education*
Motor Activities (2-2)

DeAngelis, Krupa

Academic year—section A (women), to be arranged; section B (men), morning.

Fundamental skills, rules, and organization. Locker and towel fee,* \$4.50 a semester.

45-46 *Methods and Materials for Teaching*
Individual and Dual Sports in
Secondary Schools (2-2) (men)

Hanken, Krupa

Academic year—afternoon.

Tennis, golf, swimming, wrestling, badminton, bowling. Locker and towel fee,* \$4.50 a semester.

47 *Introduction to Physical Education* (2)

Myers

Fall—morning.

An orientation course presenting the problems of physical education, vocational analysis, scientific foundations, and scope of field.

48 *Introduction to Recreation* (2)

Hanken

Spring—as arranged.

The role of recreation in modern living; current practices in community recreation work; standards of training, experience, and salary; types of leadership.

49 *Human Anatomy* (3)

Stallings

Fall—morning.

The structure of the human body. Basic course for physical education majors. Also open to both men and women not majoring in Physical Education. Prerequisite: Biology 1-2 or Zoology 1-2.

* The locker and towel fee is required for registration in one or more of the activity courses.

50 *Kinesiology* (3)

Lawrence

Spring—morning.

A study of the anatomical mechanism of movement, analysis of the action of muscles in physical education activities. Prerequisite: an approved course in anatomy.

51-52 *Methods and Materials for Teaching Physical Education Activities in Secondary Schools and Colleges* (2-2) (women) The Staff

Academic year—as arranged.

Team sports: basketball, hockey, softball, soccer, speedball, volleyball. Individual and dual sports: badminton, tennis, golf, archery, swimming and diving, life-saving and water safety. Group gymnastics. Tumbling. Locker and towel fee,* \$4.50 a semester.

58 *First Aid and Care of Athletic Injuries* (2) DeAngelis

Spring—morning.

Prevention and emergency care of injuries of all types, with special reference to first aid, civil defense, bandaging, and massage. Prerequisite: Biology 1-2 or Zoology 1-2.

SECOND GROUP

101 *Physical Education in the Elementary School* (3) Atwell, Burtner

Fall—afternoon and evening.

Physical growth and development of the child and adolescent. Survey of age characteristics and organization of physical education activities for the various age levels in elementary school, playground, and settlement house programs. Methods and materials of tumbling, games, dance, and self-testing activities.

103 *History and Principles of Physical Education* (3) Atwell and Staff

Fall—morning.

Survey of history as it relates to contemporary physical education. Study of aims, objectives, and philosophy of physical education.

105-6 *Adapted Physical Education and Physical Examinations* (3-3) Lawrence

Academic year—morning

Cause and correction of faulty body mechanics, physical examination methods for the diagnosis of postural defects, prescription of exercises, and program adaptation. Prerequisite: Physical Education 49 and 50.

*The locker and towel fee is required for registration in one or more of the activity courses.

- 107 *Techniques for Teaching Recreational Dance (1 to 2)* Burtner
 Fall—morning.
 Methods and materials for teaching the country and social dances of America and the folk dances of other countries to secondary school age and adult groups. Square-dance calling is included. Locker and towel fee,* \$4.50.
- 109-10 *Leadership Organization in the Intramural Program (2-2)* DeAngelis
 Academic year—afternoon.
 Principles of administration, organization, and supervision of intramural activities in the physical education program of the junior high school, senior high school, and college.
- 111-12 *Methods and Materials for Teaching Physical Education Activities in Secondary Schools and Colleges (1 to 2-1 to 2) (women)* The Staff
 Academic year—morning.
 Continuation of methods and materials in activities listed under Physical Education 51-52. Locker and towel fee,* \$4.50 a semester.
- 113-14 *Methods and Practice in Teaching Physical Education Activities (2 to 4-2 to 4)* The Staff
 Academic year—as arranged.
 Principles and methods applied to learning and teaching physical education activities. Supervised laboratory. Locker and towel fee,* \$4.50 a semester.
- 115-16 *Methods and Materials for Teaching Team Sports in Secondary Schools (2 to 4-2 to 4) (men)* DeAngelis, Hanken
 Academic year—morning.
 Football, basketball, baseball, track and field. Locker and towel fee,* \$4.50 a semester.
- 117 *Methods of Teaching Modern Dance (1 to 2)* Burtner
 1960-61 and alternate years.
 Techniques for the teaching of movement as a medium of expression. Practical work in body technique, composition, and the analysis of accompaniment for dance including instrumental, voice, and percussion. Application is made to both secondary school and adult age levels. Locker and towel fee,* \$4.50.

* The locker and towel fee is required for registration in one or more of the activity courses.

118 *Dance Production* (1 to 2) Burtner

1960-61 and alternate years.

Planning and staging of performances for demonstrations, dance concerts, and folk festivals. Lighting, costuming, sets, and make-up. Choreography for concerts, musicals, and plays for students taking course for two credits. Locker and towel fee,* \$4.50.

121 *School and Community Health Programs* (3) The Staff

Fall—afternoon.

Health services, healthful environment, health instruction, sources of material for general health knowledge. Prerequisite: Biology 1-2 or Zoology 1-2.

122 *Methods and Materials for Health Education* (3) Atwell

Spring—evening.

Methods and materials for teaching health at each age level. Prerequisite: Biology 1-2 or Zoology 1-2.

131 *Tests and Measurements in Physical Education* (3) The Staff

Fall—morning.

Critical survey of tests in physical activities, methods of test construction, elementary statistics.

132 *Camp Leadership* (1 to 2) Atwell, Stallings

Spring—afternoon.

Survey of outdoor education programs with special emphasis on leadership techniques for counselors.

133-34 *Observation and Student Teaching* (3-3 to 6) Atwell, Myers

First half: fall and spring—as arranged. *Second half:* fall and spring—as arranged.

Assignments are made to schools in Washington and the vicinity. Physical Education 134, student teaching fee, \$50.

136 *Survey of Dance History and Dance Forms* (3) Burtner

Not offered 1959-60.

The development of dance from primitive ritual to present day recreational and art forms of the dance. Includes ethnologic dance, practice and discussion of fundamental movement techniques, and composition.

* The locker and towel fee is required for registration in one or more of the activity courses.

138 *Organization and Administration of
Physical Education* (3)

Atwell, Myers

Spring—morning and evening.

Organization and administration of physical education programs in elementary and secondary schools and in colleges. Study of plants, fields, equipment, and programs.

151-52 *Recreational Leadership Activities*
(1 to 3-1 to 3)

Abernethy

1959-60 and alternate years: academic year—evening.

Fall semester: basic skills for the pre-school and school-age child. Laboratory practice in crafts, music, dramatics, physical and social activities. Spring semester: basic skills for the teen-age and adult. Arts and crafts, dramatics, physical and social activities.

161 *Community Organization for Recreation* (3)

Thompson

1960-61 and alternate years.

Resources, principles, and methods in organizing community recreation services.

162 *Administration of Community Recreation
Programs* (3)

Thompson

1960-61 and alternate years.

Factors and problems in administering recreation including surveys, legislation, program, area, facilities, leadership, finance, and public relations.



THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON, D. C.

Report of the Treasurer

FOR THE YEAR ENDED

AUGUST 31, 1959

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LETTER OF TRANSMITTAL

December 7, 1959

TO THE PRESIDENT AND THE BOARD OF TRUSTEES
THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON, D. C.

GENTLEMEN:

I am submitting herewith the Report of the Treasurer of The George Washington University for the fiscal year ended August 31, 1959. This report is a review of the budget operations for the year and is based on the budget approved by the Board of Trustees of the University.

The accounts of the University are kept and its financial reports arranged as far as practicable in conformity with the recommendations of the National Committee on Standard Reports for Institutions of High Education. Under that plan the funds of the University are classified in various fund groups, and the accounts and financial statements segregate clearly the assets and liabilities of each of these groups as indicated in the balance sheet, Exhibit A.

Pricer Waterhouse & Co. have examined the accounts of the University for the past year, and their report is submitted herewith.

A condensed summary of the principal facts in the report is presented below and on succeeding pages, followed by detailed Exhibits and Schedules.

Respectfully submitted,
HENRY W. HENZOG
Treasurer

CONDENSED SUMMARY

CURRENT FUNDS

These Funds represent assets which are available for immediate use in the current operation of the University.

Current Income for the Year (Exhibit B and Schedule 1)	16,002,547 39
Current Expense for the Year (Exhibit B and Schedule 2)	15,476,396 92
Excess of Current Income over Current Expense (Exhibit B)	526,150 47

The latter amount was added to Current Funds Surplus. Surplus at the end of the year amounted to \$1,503,774.22 (Exhibit C). During the year there was transferred from Surplus to Net Investment in Plant \$488,174.02 for the purchase of land and buildings, equipment, and for the reduction of trust notes payable.

Included in the Accounts Receivable of \$1,019,045 due from the United States Government resulting from cost reimbursable research contracts is approximately \$329,000 of overhead expense allocated to certain contracts with various agencies of the Department of Defense. The allocation of these expenses was made by the University consistent with policies followed in the preceding several years. Subsequent to August 31, 1959, and prior to the publication of this report, the Armed Services Board of Contract Appeals issued an opinion disallowing these receivables. The University is reviewing this opinion to determine what recourse is available to effect their collection.

Research grants, investment income, gifts, and agency funds comprise designated funds which consist of current expendable assets, limited as to disposition (Exhibit D and Schedules 10, 10A, 10B, 10C).

During this year designated gifts and grants for use as specified amounted to \$4,704,700.91. Unexpended funds totaled \$1,509,217.82 (Exhibit D).

LOAN FUNDS

For the assistance of students seeking financial aid, loan funds have been established by the University and other organizations (Schedule 4). Loans are made at a low rate of interest and when repaid the interest is added to the principal of the funds.

During the year, 640 loans were made to students. Loan funds totaled \$115,536.31.

ENDOWMENT FUNDS

The principal of endowment funds amounted to \$7,240,496.25 (Exhibit F), an increase of \$162,098.32. This increase is accounted for in large part by a bequest of Clarence W. DeKnight in the amount of \$130,686.31, the income to be used for the Law School. The endowment funds are represented by assets which, under the terms of wills, deeds of gift, or under the by-laws of the University, must be held in perpetual trust for income-producing purposes. The principal amount and changes during the year are recorded in Schedule 12.

"Consolidated Endowment Funds" consisted of 143 endowments with a total value of \$5,803,963.32 (Schedule 5). The assets of these funds are combined to eliminate the possibility of partial or total loss of any fund through the failure of a specific investment, and to avoid temporary suspension of income and the carrying of uninvested small cash balances, and to give equality of treatment to all funds. Unless otherwise restricted by the donors, the assets of all new endowments are added to the assets of the Consolidated Endowment Funds.

Reserves for Protection of Investments were as follows: Consolidated Endowment Funds, \$99,670.11; Scottish Rite Fund, \$57,650.36 (Schedule 12).

Earnings of Consolidated Endowment Funds are recorded in one income account and at the end of the year are distributed to the individual funds using the market value basis of distribution. The average rate of return on the investments of these funds amounted to 4.5914% during the past year; however, income was actually distributed on the basis of units assigned to each fund.

The Scottish Rite Endowment Fund earned 5.622% net income on its investments during the year just ended.

Net income from all investments for the year was \$366,917.85 (Schedule 10A).

Pledges to the School of Medicine Endowment Fund on August 31, 1959, totaled \$261,695.00.

PLANT FUNDS—UNEXPENDED

Cash and other assets for development of the physical plant comprise these funds (Schedule 7). At the end of the year the balance was \$513,770.56 (Exhibit 6).

December 7, 1959

TO THE PRESIDENT AND THE BOARD OF TRUSTEES
THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON, D. C.

We have examined the accompanying balance sheet of The George Washington University as at August 31, 1959, and the summary of current income and expense, summary of current funds surplus and summaries of other funds (Exhibits A through H) for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary.

Subsequent to August 31, 1959, reimbursement of certain costs incurred by the University which were allocated to research projects undertaken on behalf of United States Military departments has been disallowed by the United States Government's Armed Services Board of Contract Appeals. Under this decision approximately \$329,000 of the total of \$1,019,045 included in the University's August 31, 1959, balance sheet as receivable from the Government would not be reimbursed. The University is reviewing this decision to determine what recourse is available to effect collection of these receivables.

In our opinion, subject to the comments in the preceding paragraph, the accompanying financial statements (Exhibits A through H) present fairly the financial position of The George Washington University as at August 31, 1959, and the results of its operations for the year then ended, in conformity with generally accepted principles of accounting applied on a basis consistent with that of the preceding year.

PRICE WATERHOUSE & CO.

THE GEORGE WASHINGTON UNIVERSITY

BALANCE SHEET

August 31, 1959

ASSETS

CURRENT FUNDS

Cash	766,627.03	836,737.27
Cash—Trustee (Note 6)	70,110.24	563,752.67
Investments (Note 1) (Schedule 3) (market value \$545,652)		36,727.00
Accrued Interest		71,807.23
Note Receivable (Schedule 3)		
Accounts Receivable—U. S. Government—Cost Reimbursable Research Contracts	1,019,044.89	
Hospital Patients, less \$120,000 for doubtful accounts	514,805.38	
Other	64,479.00	
		1,598,327.27

Inventories (at cost)	291,885.00	
Prepaid Insurance and Other Expense	73,052.36	3,472,288.80

LOAN FUNDS

Cash	30,046.23	
U. S. A. Treasury Bills, 3.04%, due 9-24-59 (Note 1) (market value \$29,500)	29,799.87	
Loans Receivable (Schedule 4)	55,600.21	115,536.31

ENDOWMENT FUNDS

Cash	5,199.96	
Investments (Note 1) (Schedule 5)		
Stocks and Bonds (market value \$8,285,539)	6,625,922.44	
Real Estate	188,180.00	
Other Investments	42,311.28	
		6,861,613.68
Funds Held in Trust by Others (Schedule 6)	378,882.57	7,240,496.25

PLANT FUNDS—UNEXPENDED

Cash	39,835.97	
Investments (Note 1) (Schedule 7) (market value \$473,563)	473,954.59	513,770.56

INVESTED IN PLANT

Land and Buildings (Note 2) (Schedule 8)	21,217,147.59	
Equipment (Note 2) (Schedule 9)	2,889,998.24	24,107,145.83

TOTAL

35,449,237.75

LIABILITIES, FUNDS, SURPLUS

CURRENT FUNDS

Accounts Payable	425,778.19
Deferred Income	33,518.57
Designated Funds (Note B) (Exhibit D)	
Sponsored Research	716,403.80
Investment Income	102,735.27
Miscellaneous	465,472.97
Agency	224,605.78
	<u>1,509,217.82</u>
Surplus (Exhibit C)	<u>1,503,774.22</u>
	3,472,288.80

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LOAN FUNDS—Balances (Exhibit E)	115,536.31
ENDOWMENT FUNDS—Balances (Exhibit F)	7,240,496.25
PLANT FUNDS—Unexpended Balances (Note 4) (Exhibit G)	513,770.56

INVESTED IN PLANT

Trust Notes Payable (Note 5)	868,542.32
Bonds Payable (Note 6)	1,250,000.00
Net Investment in Plant (Exhibit H)	<u>21,988,603.51</u>
	24,107,145.83

TOTAL	<u>35,449,237.75</u>
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EXHIBIT A

SUMMARY OF CURRENT INCOME AND EXPENSE For the Year Ended August 31, 1959

Income (Schedule 1)	
Educational and General	
Student Fees	4,489,788.34
Endowment and Plant Funds Income—portion used	308,607.29
Gifts—portion used	298,324.85
Student Activities	88,130.41
Miscellaneous	211,884.60
Sponsored Research—grants used and reimbursements under special contracts	4,319,817.00
Hospital	5,571,167.47
Auxiliary Enterprises	15,287,719.96
	<u>714,827.43</u>
	16,002,547.39
Expense (Schedule 2)	
Educational and General	
Administration and General	1,497,234.44
Instruction and Departmental Research	3,075,552.06
Libraries	187,900.85
Maintenance and Operation of Plant	722,464.22
Student Activities	199,339.58
Sponsored Research	4,319,817.00
Hospital	5,369,145.30
	<u>15,371,453.45</u>
Less overhead allocated to Sponsored Research and Hospital	14,609,453.03
	638,421.73
Auxiliary Enterprises	228,522.16
Student Aid	<u>15,476,396.92</u>
	526,150.47
EXCESS OF CURRENT INCOME OVER CURRENT EXPENSE—EXHIBIT C	

SUMMARY OF CURRENT FUNDS SURPLUS

For the Year Ended August 31, 1959

	TOTAL	UNAPPROPRIATED	APPROPRIATED FOR HOSPITAL	RESERVE FOR BOND RETIREMENT
BALANCE AUGUST 31, 1958	1,275,764.77	170,375.82	1,105,388.95	
ADDITIONS OR (DEDUCTIONS)				
Excess of Current Income over Current Expense (Exhibit B)	526,150.47	324,128.30	202,022.17	
Hospital Depreciation included in Current Expense for which there was no outlay of Current Funds (Schedule 2).	194,500.00		194,500.00	
Transfer to Net Investment in Plant equal to cost of non-departmental capital additions from Current Funds (Exhibit H)	(-488,174.02)	(-257,321.91)	(-230,852.11)	
Transfer to National Defense Loan Fund - Schedule 11	(-4,467.00)	(-4,467.00)		
Transfer for Bond Retirement (Note 6)		(-58,131.08)		58,131.08
BALANCE AUGUST 31, 1959- EXHIBIT A	1,501,774.22	174,584.13	1,271,059.01	58,131.08

EXHIBIT C

THE GEORGE WASHINGTON UNIVERSITY
NOTES TO FINANCIAL STATEMENTS

August 31, 1959

NOTE 1

Investments are stated at cost or at fair market value at date of acquisition except for certain real estate which is stated at depreciated cost.

NOTE 2

Land and buildings are stated in the accounts as follows:

Land and buildings acquired prior to 1921: at appraised values determined by the Washington Real Estate Board in June 1921.

Medical School property: at appraised value determined by Board of Trustees in August 1935.

All other land and buildings: at cost or appraised values at dates of acquisition.

Equipment is carried in the accounts as follows:

Hospital and Cancer Clinic equipment: at cost less accumulated depreciation to date.

All other equipment: at cost less accumulated depreciation to August 1938.

NOTE 3

The University's designated funds include \$445,584 received from the United States Government for use in research projects, principally by the School of Medicine and the Cancer Clinic. The balance of the designated funds was received, for the most part, from charitable institutions and foundations for research and other uses of the University's schools and departments and to finance student aid.

Unexpended plant funds at August 31, 1959, are designated for the following uses:	
Hospital Building	247,635
Law Center Building	154,095
Athletic facilities	40,624
Other	70,817
	<u>\$13,771</u>

NOTE 5

Trust notes payable consist of the following:

Riggs National Bank	
Secured by School of Medicine Buildings, Due February 21, 1960, Interest 4%	350,000
Secured by Coeoran Hall and Stockton Hall, Due October 30, 1960, Interest 5%	300,000
	650,000
Equitable Life Assurance Society	
Secured by Nurses Home, \$2,958 payable quarterly, including interest at 5%. Balance of note due November 1, 1961	134,938
Perpetual Building Association	
Secured by property at 2001 H Street, N. W. Due \$675 per month including interest at 5%	70,287
Mr. John J. Kellner	
Secured by property at 900 23rd Street, N.W. Due \$400 per month including interest at 5%	13,317
	<u>\$88,542</u>

NOTE 6

These bonds, "The George Washington University Dormitory Bonds of 1957", bear interest of 27 1/8% per annum and mature serially during the period November 1, 1960, through November 1, 1997. The bonds are secured by first mortgages on Madison and Adams Halls and their sites and a first lien on and pledge of the net revenues of the Halls and the University bookstores. The University is required to transfer \$38,000 semi annually to a Bond and Interest Sinking Fund Account until the balance in the account is \$115,000. Thereafter the University is required to make such transfers as are necessary so that on each October 15 and April 15 the amount on deposit would be \$115,000 plus an amount equal to the required debt service for the next year.

Pursuant to the above mentioned requirements, \$70,110 was on deposit with the Bond Trustee at August 31, 1959.

SUMMARY OF DESIGNATED FUNDS For the Year Ended August 31, 1959

	TOTAL	SPONSORED RESEARCH (Schedule 10)	INVESTMENT INCOME (Schedule 10A)	MISCEL- LANEOUS (Schedule 10B)	AGENCY (Schedule 10C)
BALANCE AUGUST 31, 1958	1,290,131.17	605,880.36	102,983.50	577,538.84	3,758.47
ADDITIONS					
Gifts and Grants	.....	4,430,340.44	.....	274,360.47	
Investment income	.....	.....	324,269.04	13,721.06	
Gains on sale of investments	.....	.....	.....	22.85	
Deposits	.....	.....	.....	.....	301,244.09
	5,345,957.95	4,430,340.44	324,269.04	288,104.38	301,244.09
DEDUCTIONS					
Research	.....	4,319,817.00	11,545.00	37,548.37	
Scholarships, fellowships	.....	.....	1,808.75	596.00	
Prizes	.....	.....	.....	.....
Transferred to	.....	.....	184.43	.....
Net Investment in Plant—Exhibit H	.....	.....	.....	.....
Current Income—Schedule 1	.....	.....	265,958.48	264,779.67	
Hospital and General	.....	.....	9,239.00	91,682.30	
Sponsored Research—Schedule 10	.....	.....	4,479.05	.....
Designated Miscellaneous Funds—Schedule 10B	.....	.....	13,721.06	200.00	
Designated Agency Funds—Schedule 10C	.....	.....	.....	1,368.16	
Loan Funds—Schedule 11	.....	.....	4,585.62	3,175.00	
Endowment Funds—Schedule 12	.....	.....	12,965.88	3,512.00	
Plant Funds—Schedule 13	.....	.....	.....	308.75	80,396.78
Withdrawals	.....	.....	324,487.27	400,170.25	80,396.78
	5,124,871.30	4,319,817.00	324,487.27	465,472.97	224,605.78
BALANCE AUGUST 31, 1959—EXHIBIT A	1,509,217.82	716,403.80	102,735.27	465,472.97	224,605.78

SUMMARY OF LOAN FUNDS PRINCIPAL

For the Year Ended August 31, 1959

BALANCE AUGUST 31, 1958 66,576.34

ADDITIONS (Schedule 11)

Gifts	3,529.04
Interest on Loans	764.93
University Surplus	4,467.00
U. S. Government	<u>48,959.97</u>

BALANCE AUGUST 31, 1959—EXHIBIT A..... 115,536.31

EXHIBIT E

SUMMARY OF ENDOWMENT FUNDS PRINCIPAL

For the Year Ended August 31, 1959

BALANCE AUGUST 31, 1958 7,078,397.93

ADDITIONS (Schedule 12)

Gifts.....	159,648.37
Investment income	<u>4,585.62</u>
	164,233.99
	<u>7,242,631.92</u>

DEDUCTIONS (Schedule 12)

Net loss on sale of investments	<u>2,135.67</u>
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BALANCE AUGUST 31, 1959—EXHIBIT A..... 7,240,496.25

SUMMARY OF PLANT FUNDS PRINCIPAL

For the Year Ended August 31, 1959

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BALANCE AUGUST 31, 1958 513,650.08

ADDITIONS (Schedule 13)

Gifts	83,202.91
Investment income	12,965.98
Gain on sale of investments	825.65
	<u>96,994.44</u>
	<u>610,644.52</u>

DEDUCTIONS (Schedule 13)

Invested in Plant Exhibit H

Land and Buildings	80,010.64
Equipment	15,275.92
Transferred to Current Income—Schedule 1	587.40
Transferred to Sponsored Research—Schedule 10	1,000.00
	<u>96,873.96</u>

BALANCE AUGUST 31, 1959—EXHIBIT A

513,770.56

EXHIBIT G

SUMMARY OF NET INVESTMENT IN PLANT

For the Year Ended August 31, 1959

	CURRENT FUNDS		DESIGNATED FUNDS (Exhibit D)	PLANT FUNDS (Exhibit G)	TOTAL
	DEPARTMENTS (Schedule 2)	SURPLUS (Exhibit C)			
BALANCE AUGUST 31, 1958.....					21,429,038.32
ADDITIONS					
University		242,439.09		34,000.00	
Land and Buildings			184.43	1,034.37	
Equipment	170,420.18	3,807.84			
Trust Notes Curtailed		11,074.98			
	<u>170,420.18</u>	<u>257,321.91</u>	<u>184.43</u>	<u>35,034.37</u>	
Hospital					
Land and Buildings		132,323.46		46,010.64	
Equipment		98,528.65		14,241.55	
		<u>230,852.11</u>		<u>60,252.19</u>	
TOTAL ADDITIONS.....	<u>170,420.18</u>	<u>488,174.02</u>	<u>184.43</u>	<u>95,286.56</u>	
DEDUCTIONS					
Depreciation of Hospital Building and Equipment		194,500.00			
			184.43	95,286.56	559,565.19
TOTAL NET ADDITIONS.....	<u>170,420.18</u>	<u>293,674.02</u>			
BALANCE AUGUST 31, 1959—EXHIBIT A.....					<u>21,988,003.51</u>

SCHEDULES

CURRENT INCOME

For the Year Ended August 31, 1959

EDUCATIONAL AND GENERAL

STUDENT FEES

Tuition and Laboratory

Columbian	386,582.91
Counselling and Guidance Training Institute	47,432.72
Education	185,442.65
Engineering	350,845.57
General Studies	450,488.66
Government	171,104.88
Air Force Advanced Management	56,317.60
European Productivity Agency	(- 115.86)
French Labor Program	18,073.12
Health, Education, Welfare Department	1,200.00
International Cooperation Administration—Austrian 1	7,139.28
“ Austrian 2	6,833.39
Israel Labor Productivity	3,328.00
Navy Comptrollership	36,890.93
Graduate Council	28,999.75
Junior	810,001.42
Law	414,573.60
Medicine	390,896.00
Pharmacy	18,007.01
Special Students	184,074.52
University Students	341,895.02
	<hr/>
	3,910,011.17

Summer Sessions

402,398.36

Unallocated—Old Fees

2,498.52

4,314,908.05

Miscellaneous Fees

Application	80,368.00	
Art Validation	192.50	
Binding Theses	1,176.00	
Breakage	681.79	
Change	3,294.00	
Engineers Council	3,169.50	
Graduation	36,693.50	
Graduate Record Examination	2,520.00	
Late	2,825.00	
Library Fines	3,337.00	
Personnel Office Credential Service	13.00	
Publication of Theses	1,955.00	
Reinstatement	2,195.00	
Service	5,044.00	
Special Examinations	977.00	
Student Bar Association	6,342.00	
Testing Center	18,740.00	
Transcripts	5,357.00	
	<u>174,880.29</u>	<u>4,489,788.34</u>

CURRENT INCOME (Continued)

For the Year Ended August 31, 1959

EDUCATIONAL AND GENERAL (Continued)

INVESTMENT INCOME		
Endowment Funds—Unrestricted.....	42,648.81	
“ Restricted.....	<u>264,624.94</u>	
Plant Funds—Restricted.....		307,273.75
		<u>1,333.54</u>
		308,607.29

GIFTS		
Unrestricted (Appendix—Page 1).....	45,772.26	
Restricted (Schedule 10B—portion used).....	<u>252,552.59</u>	
		298,324.85

STUDENT ACTIVITIES		
Athletics.....	59,612.88	
Campus Combo.....	251.03	
Cherry Tree.....	10,553.79	
Colonial Boosters.....	368.80	
Dramatics.....	1,195.50	
Engineers Council.....	1,488.00	
Hatchet.....	7,237.77	
Homecoming.....	4,441.47	
Student Bar Association.....	234.77	
Student Council Activities.....	2,552.17	
Student Council Reserve.....	<u>194.23</u>	
		88,130.41

MISCELLANEOUS	
Handline Fee—Veterans Administration.....	12,369.03
Interest Earned.....	9,616.19
Law Review.....	6,473.51
Mechanics.....	2,000.36
Miscellaneous.....	4,617.38
Parking Lot—Hospital.....	31,419.50
“ ” Students.....	23,305.60
Reading Clinic.....	42,895.00
Rent on Miscellaneous Properties—Net.....	75,555.26
Speech Clinic.....	3,045.37
Transfer from Law Center Fund (Schedule 13) for campaign expense.....	587.40
	<hr/> 211,884.60

SPONSORED RESEARCH (Schedule 10—portion used)..... 4,319,817.00

CURRENT INCOME (Continued)
For the Year Ended August 31, 1959

EDUCATIONAL AND GENERAL (Continued)

Hospital—Patients

Room Charges	
Private.....	657,763.00
Semi-Private.....	1,589,605.31
Wards.....	328,878.00
Nurses.....	164,439.00
	<u>2,740,685.31</u>

Special Service Departments

Operating Room.....	304,842.25
Delivery Room.....	139,827.30
Anesthesiology.....	372,113.00
Oxygen Therapy.....	63,051.10
X-Ray.....	314,276.95
Physical Medicine.....	84,551.54
Laboratories.....	624,105.64
Pharmacy.....	353,508.10
Cardiology.....	47,764.75
Electroencephalography.....	11,702.50
Post Anesthesia Room.....	25,039.50
Radiation Therapy.....	33,134.25
	<u>2,373,916.84</u>

Cancer Clinic	
General Services.....	116,501.20
Gifts	<u>1,007.64</u>
	118,108.84

Out-Patient Departments	
Clinics	100,463.38
Emergency Room	65,808.75
Ophthalmology	<u>41.00</u>
Surgery	5,610.75
Dental	12.00
Gynecology—Obstetrics.....	<u>2,714.95</u>
	174,650.83

Other Income	
Medical and Surgical Supplies	183,310.97
Special Duty Nurses	<u>7,254.00</u>
Telephone	<u>17,685.53</u>
	208,250.50
	5,615,612.36 (Continued)

CURRENT INCOME (Continued)

For the Year Ended August 31, 1959

EDUCATIONAL AND GENERAL (Continued)

HOSPITAL—Patients (Continued)	5,615,612.36
Less Allowances	
Group Hospitalization	60,856.25
Hospital Service Agency	14,448.48
D. C. Health Department	33,251.18
Discounts	21,928.48
Free Work	181,086.53
Other	4,721.18
Total—Hospital Patients	316,292.10
Total—Hospital Patients	5,299,320.26

HOSPITAL—Other Income	136,881.69
Cafeteria	9,239.00
Endowment Income (Schedule 10A)	91,682.30
Gifts (Schedule 10B)	4,000.13
—Other	15,804.55
Bad Debt Recovery	1,585.44
Laundry	1,458.95
Medical Abstracts	4,669.80
Parking Rent	1,148.46
Public Telephone Commissions	5,376.84
Miscellaneous	
	271,847.21
	5,571,167.47

AUXILIARY ENTERPRISES

Residence Halls

Adams Hall	48,996.75
Interns and Residents Hall	6,000.00
Madison Hall	56,992.11
Nurses Home	39,763.13
Strong Hall	33,383.45
Welling Hall	23,137.79
	<u>208,273.23</u>

Sorority Halls

2112 G Street, NW.	1,350.00
2129 G Street, NW.	5,067.00
2131 G Street, NW.	780.00
802 21st Street, NW.	630.00
	<u>7,827.00</u>

Miscellaneous

Book Store—University	408,883.85
" Medical School	53,650.35
Cafeteria Commissions	7,496.75
Duplicating Bureau	3,419.80
Lisner Auditorium	23,994.45
Student Union	1,282.00
	<u>498,727.20</u>
	<u>714,827.43</u>

TOTAL—EXHIBIT B..... 16,002,547.39

CURRENT EXPENSE

For the Year Ended August 31, 1959

EDUCATIONAL AND GENERAL

ADMINISTRATION AND GENERAL	TOTAL	SALARIES	OTHER EXPENSE	EQUIPMENT EXHIBIT H
President's Office	57,724.14	39,999.01	17,725.13	
Administrative Secretary's Office	143,289.58	81,839.62	61,449.96	
Dean of Faculties' Office	39,689.94	38,181.37	1,508.57	
Treasurer's Office	400,602.34	273,272.66	123,327.52	4,002.16
Admissions Office	83,680.73	77,019.23	6,661.50	
Registrar's Office	78,031.47	67,710.29	10,321.18	
Activities for Men	7,000.02	6,347.23	652.79	
Activities for Women	18,949.90	17,904.12	1,045.78	
Adviser to Students from Foreign Countries	1,515.56	698.67	816.89	
University Chapels	4,861.06	3,102.92	1,758.14	
Veterans Education	14,732.02	14,128.32	603.70	
Staff Benefits	294,057.40	33,293.88	260,763.52	
Assistant to the President	32,896.64	23,687.30	9,209.34	
Alumni Relations	52,249.28	20,833.70	31,415.58	
Educational Counseling Office	15,247.49	11,597.55	3,649.94	
Fund Raising	21,548.02	13,649.88	7,898.14	
Public Relations Office	56,594.52	37,161.83	19,432.69	
Convocations	24,786.26	768.06	24,018.20	
Scientific Activities	12,244.67	11,285.58	959.09	
Financial Expense	74,987.96		74,987.96	
General Insurance	12,615.82		12,615.82	
Legal Expense	23,683.38		23,683.38	
Curator of Art	24,659.76		999.08	
Health Administration	887.40	18,139.92	6,519.84	
Campaign Expense—Law Center	1,497,234.44	740,621.14	756,611.14	4,002.16

Administration.....	6,491.95	5,799.96	601.99
Art.....	25,981.42	13,210.00	12,771.42
Biology.....	20,337.15	19,073.75	764.52
Botany.....	15,109.60	12,595.00	540.31
Chemistry.....	117,127.54	106,792.49	9,105.49
Classical Languages and Literature	4,300.60	4,200.00	60
Economics.....	62,362.20	62,189.84	172.36
English.....	121,355.62	120,709.84	645.78
Geography.....	22,497.91	21,604.96	644.01
Germanic Languages.....	19,643.74	12,954.96	6,688.78
History.....	20,247.96	20,200.00	47.96
Journalism.....	61,429.82	61,229.88	199.94
Mathematics.....	16,809.80	16,770.00	39.80
Philosophy.....	50,464.68	50,410.00	54.68
Physics.....	12,207.36	12,580.00	(-372.64)
Political Science.....	55,420.25	51,137.26	2,671.17
Psychology.....	48,216.09	48,074.96	141.13
Counselling and Guidance Institute.....	54,382.14	53,682.46	554.49
Religion.....	42,168.17	6,230.25	35,333.21
Romance Languages.....	17,913.29	17,839.92	73.37
Language Workshop.....	67,646.67	67,390.00	256.67
Secretarial Studies.....	2,502.79	1,900.44	602.35
Slavic Languages.....	8,037.40	7,150.00	887.40
Sociology.....	8,163.84	8,140.00	23.84
Speech.....	21,129.46	21,090.00	39.46
Statistics.....	43,630.51	42,089.57	1,390.94
Zoology.....	34,179.09	33,960.00	219.09
	26,074.01	22,856.25	2,770.76
	1,005,731.06	921,861.79	76,978.88
			447.00
			6,890.39

CURRENT EXPENSE (Continued)
For the Year Ended August 31, 1959

	TOTAL	SALARIES	OTHER EXPENSE	EQUIPMENT EXHIBIT II
EDUCATIONAL AND GENERAL				
INSTRUCTION AND DEPARTMENTAL RESEARCH (Continued)				
Education				
Administration.....	10,547.28	9,647.56	899.72	125.00
Education.....	76,160.82	75,254.72	781.10	299.75
Home Economics.....	14,823.82	13,300.00	1,224.07	424.75
	<u>101,531.92</u>	<u>98,202.28</u>	<u>2,904.89</u>	
Engineering				
Administration.....	22,724.28	16,652.06	6,072.22	2,547.44
Civil.....	59,900.40	56,279.85	1,073.11	5,000.10
Electrical.....	54,681.42	48,549.13	1,072.19	3,933.97
Mechanical.....	43,610.40	38,570.00	1,306.43	348.80
Engineering Administration.....	39,775.49	38,525.00	901.69	
Engineers Council.....	2,157.40		2,157.40	
Mecheleciv.....	2,157.40		4,300.46	
	<u>227,349.85</u>	<u>198,376.04</u>	<u>17,083.50</u>	<u>11,890.31</u>
General Studies				
Administration.....	85,463.82	71,766.08	13,897.74	
Instruction.....	154,360.55	153,890.55	470.00	191.99
Reading Clinic.....	28,574.78	27,598.28	784.51	
Russian Telecourse.....	34,681.04	3,490.00	31,191.04	
Workshop in Human Development.....	2,880.00	2,880.00		
	<u>306,160.19</u>	<u>259,624.91</u>	<u>46,343.29</u>	<u>191.99</u>

Government Administration	13,882.89	10,212.92	6,619.07
Business Administration	30,687.61	30,430.00	207.61
Public Administration	62,816.13	61,972.72	343.41
Navy Comptrollership	22,015.00	22,015.00	
Air Force Advanced Management	20,501.75	17,799.80	2,554.78
European Productivity Agency	34,098.57	28,588.94	5,174.64
Air Force Resources Management	527.08	228.45	96.52
International Cooperation Administration	5,389.28	352.08	175.00
I. C. A. Program - Austrian 2	5,329.36	3,200.00	2,189.28
French Labor	12,278.31	3,200.00	2,129.36
Internal Revenue Service Training	2,221.71	10,949.40	1,328.91
	209,535.36	1,780.00	441.71
		190,729.31	18,081.19
Graduate Council			724.86
Administration	10,459.61	7,420.58	3,039.03
Instruction	4,739.31	1,125.00	3,614.31
	15,198.92	8,545.58	6,653.34
Junior - Administration	7,445.69	6,668.74	776.95
Law			
Administration	31,872.40	21,893.74	9,978.66
Instruction	179,987.75	176,248.50	3,739.25
Patent, Trademark and Copyright Foundation	81,350.78	61,755.89	19,142.89
Law Review	15,962.14	2,782.92	13,179.22
Student Bar Association	3,064.36		3,064.36
	312,237.43	262,681.05	49,104.38
			452.00
			452.00

CURRENT EXPENSE (Continued)
For the Year Ended August 31, 1959

EDUCATIONAL AND GENERAL (Continued)
INSTRUCTION AND DEPARTMENTAL RESEARCH (Continued)

	TOTAL	SALARIES	OTHER EXPENSE	EQUIPMENT EXHIBIT H
Medicine	65,191.28	58,609.84	6,581.44	
Administration	45,866.80	39,993.87	2,244.95	3,627.98
Anatomy	1,085.76	999.96	85.80	
Anesthesiology	76,804.57	65,178.03	4,078.54	7,548.00
Bacteriology, Hygiene, Preventive Medicine	57,402.41	51,885.36	3,386.66	2,130.39
Biochemistry	1,585.00	1,585.00		
Dermatology and Syphilology	63,686.57	61,968.41	898.76	829.40
Medicine	8,746.00	8,199.96	321.46	224.58
Neurology and Neurological Surgery	31,246.53	30,849.64	396.89	
Obstetrics and Gynecology	1,425.67	1,225.00	200.67	
Ophthalmology	1,644.00	1,450.00	52.50	141.50
Otolaryngology	34,232.84	32,506.30	1,247.49	479.05
Pathology	20,897.61	20,746.54	151.07	
Pediatrics	43,145.80	40,000.74	1,840.81	1,304.25
Pharmacology	3,376.49	3,099.96	126.01	150.52
Physical Medicine and Rehabilitation	64,637.70	56,337.54	4,641.57	3,658.59
Physiology	13,539.13	13,445.71	93.42	
Psychiatry	36,480.63	34,753.24	1,427.39	300.00
Surgery	1,250.00	1,250.00		
Urology	14,240.32	6,983.30	4,187.20	3,069.82
Research—General	6,181.42	5,599.92	71.50	510.00
Teaching Aids	829.20	735.00	94.20	
Lecturers and Exchange Professors	593,505.73	537,403.32	32,128.33	23,974.08

Pharmacy—Administration.....	3,129.77	2,520.00	609.77
Instruction.....	39,059.72	36,523.45	2,090.57
	<u>42,189.49</u>	<u>39,043.45</u>	<u>2,700.34</u>
			<u>445.70</u>
			<u>445.70</u>
Special—Administration.....	7,002.02	6,777.48	224.54
University—Administration.....	6,734.17	6,049.47	684.70
Summer Sessions—Administration.....	10,224.71	5,440.78	4,783.93
Instruction.....	136,806.05	132,506.57	4,299.48
	<u>147,030.76</u>	<u>137,947.35</u>	<u>9,083.41</u>
Physical Education—Men.....	41,910.17	33,077.61	8,832.56
Women.....	46,863.59	40,599.84	6,263.75
	<u>88,773.76</u>	<u>73,677.45</u>	<u>15,096.31</u>
Air Science—R. O. T. C.....	5,125.71	5,169.43	(-43.72)
TOTAL INSTRUCTION AND DEPARTMENTAL RESEARCH.....	<u>3,075,552.06</u>	<u>2,752,757.65</u>	<u>277,800.33</u>
			<u>44,994.08</u>

CURRENT EXPENSE (Continued)
For the Year Ended August 31, 1959

EDUCATIONAL AND GENERAL (Continued)	TOTAL	SALARIES	OTHER EXPENSE	EQUIPMENT EXHIBIT II
LIBRARIES - Operation	132,899.91	110,904.38	15,061.06	6,934.47
Books	55,000.94	.....	.....	55,000.94
	187,900.85	110,904.38	15,061.06	61,935.41
MAINTENANCE AND OPERATION OF PLANT	722,464.22	339,981.46	323,252.73	59,230.03
STUDENT ACTIVITIES	141,398.08	55,679.74	85,718.34	
Men's Athletics	9,067.88	4,851.11	4,216.77	
Dramatics	2,613.86	975.52	1,638.34	
Recreation Program	4,575.83	3,205.11	1,370.72	
Student Activities Office	5,771.91	2,749.92	3,021.99	
University Accounts	34,624.95	.....	34,624.95	
Student Council Accounts	1,287.07	100.00	1,187.07	
Homecoming	199,339.58	67,561.40	131,778.18	
SPONSORED RESEARCH	4,319,817.00	2,650,511.34	1,669,305.66	

Hospital.

Administration.....	<u>499,989.95</u>	<u>220,365.25</u>	<u>279,624.70</u>
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Dietary.....	<u>611,359.98</u>	<u>290,914.56</u>	<u>320,445.42</u>
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Household and Property

Laundry.....	87,708.16	84,547.53	3,160.63
Linen Service.....	51,118.15	17,797.47	33,320.68
Housekeeping.....	244,699.31	190,372.74	54,326.57
Plant.....	305,480.74	90,549.85	214,930.89
	<u>689,006.36</u>	<u>383,267.59</u>	<u>305,738.77</u>

Professional Care—General

Medical and Surgical.....	128,112.30	95,363.43	32,748.87
Nursing Care.....	1,161,594.21	1,106,160.15	55,434.06
Central Sterile Supply.....	107,527.30	36,637.65	70,889.65
Glove Room.....	21,464.14	7,284.00	14,180.14
	<u>1,418,697.95</u>	<u>1,245,445.23</u>	<u>173,252.72</u>

CURRENT EXPENSE (Continued)
For the Year Ended August 31, 1959

EDUCATIONAL AND GENERAL (Continued)	TOTAL	SALARIES	OTHER EXPENSE	EQUIPMENT EXHIBIT H
HOSPITAL (Continued)				
Professional Care—Special	19,972.71	19,972.71		
Post Anesthesia Room.....	211,626.09	146,625.25	65,000.84	
Operating Room.....	111,450.63	98,925.64	12,524.99	
Delivery Room.....	192,134.23	139,012.80	53,121.43	
Anesthesiology.....	27,299.82	12,941.50	14,358.32	
Inhalation Therapy.....	21,906.18	16,071.37	5,834.81	
Cardiology—Heart Station.....	7,435.96	6,565.42	870.54	
Electroencephalography.....	241,467.10	143,350.55	98,116.55	
Laboratories.....	177,727.13	33,283.27	144,443.86	
Pharmacy.....	67,642.19	58,421.77	9,220.42	
Physical Medicine.....	183,047.65	126,301.94	56,745.71	
X-Ray.....	80,184.81	60,871.02	19,313.79	
Medical Records.....	3,251.47	1,240.30	2,005.17	
Medical Records for Residents and Interns.....	1,345,145.97	863,589.54	481,556.43	
Out-Patient Department				
Administration.....	63,518.24	36,985.80	26,532.44	
Nursing Care.....	44,520.25	44,520.25		
Emergency Room.....	35,674.46	26,420.74	9,253.72	
	143,712.95	107,926.79	35,786.16	

Cancer Clinic			
Administration.....	46,148.60	30,171.78	15,976.82
Medical and Surgical.....	55,649.65	30,718.31	24,931.34
Radioisotope Laboratory.....	5,643.73	3,415.51	2,228.22
Housekeeping, Plant.....	20,970.34	8,748.15	12,222.19
Overhead Credit—Research.....	(-19,880.99)		(-19,880.99)
Depreciation—Equipment.....	4,500.00		4,500.00
	<u>113,031.33</u>	<u>73,053.75</u>	<u>39,977.58</u>
Respiratory and Rehabilitation Center			
Administration.....	67,324.21	44,144.56	23,179.65
Nursing Care.....	46,495.42	45,259.92	1,235.50
	<u>113,819.63</u>	<u>89,404.48</u>	<u>24,415.15</u>
Miscellaneous			
Ambulance Service.....	335.50		335.50
Scholarships.....	5,985.00		5,985.00
Incentive Awards.....	1,800.00		1,800.00
Nurses Home.....	15,000.00		15,000.00
Residents and Interns Room Charges.....	4,651.94		4,651.94
Allowance for Doubtful Accounts.....	92,928.47		92,928.47
Transfer to University for Support of School of Medicine.....	123,680.27		123,680.27
Depreciation—Building.....	60,000.00		60,000.00
Equipment.....	130,000.00		130,000.00
	<u>434,381.18</u>		<u>434,381.18</u>
TOTAL HOSPITAL.....	<u>5,369,145.30</u>	<u>3,273,967.19</u>	<u>2,095,178.11</u>

CURRENT EXPENSE (Continued)
For the Year Ended August 31, 1959

AUXILIARY ENTERPRISES

	<u>TOTAL</u>	<u>SALARIES</u>	<u>OTHER EXPENSE</u>	<u>EQUIPMENT EXHIBIT H</u>
RESIDENCE HALLS				
Adams Hall	30,079.55	10,804.94	19,294.61	
Interns and Residents Hall	1,578.91		1,578.91	
Madison Hall	45,254.35	19,614.64	25,639.71	
Strong Hall	43,956.64	14,850.73	29,105.91	
Welling Hall	17,776.20	6,099.40	11,676.80	
	<u>138,145.65</u>	<u>51,369.71</u>	<u>87,295.94</u>	
SORORITY HALLS				
2112 G Street, NW.	1,003.23		1,003.23	
2129 G Street, NW.	3,226.07		3,226.07	
2131 G Street, NW.	<u>482.80</u>	<u>200.00</u>	<u>282.80</u>	
802 21st Street, NW.	129.98		129.98	
	<u>4,842.08</u>	<u>200.00</u>	<u>4,642.08</u>	
SERVICES				
Book Store—University	375,836.63	44,340.64	331,302.49	193.50
" Medical School	48,637.51	4,989.22	43,573.29	65.00
Duplicating Bureau	8,281.06	5,260.26	3,020.80	
Lisner Auditorium	26,045.51	14,191.04	11,854.47	
Student Union	36,113.29	16,913.92	19,199.37	
	<u>494,914.00</u>	<u>85,705.08</u>	<u>408,950.42</u>	<u>258.50</u>
TOTAL AUXILIARY ENTERPRISES	638,421.73	137,274.79	500,888.44	258.50

STUDENT AID

SCHOLARSHIPS.....	87,454.29	2,600.00	84,854.29
GRANTS-IN-AID.....	141,067.87	.....	141,067.87
	<u>228,522.16</u>	<u>2,600.00</u>	<u>225,922.16</u>

TOTAL EXPENSE..... 16,238,397.34 10,126,179.35 5,941,797.81 170,420.18

Less overhead allocated to Sponsored Research
and Hospital..... 762,000.42

TOTAL EXPENSE, ADJUSTED—EXHIBIT B..... 15,476,396.92

INVESTMENTS OF CURRENT FUNDS August 31, 1959

	Description	%	Due	Value	
				Market	Book
Bonds					
Federal Land Banks	Consolidated Farm Loan.....	2½	1960	49,350.00	50,000.00
State of Israel	Development Issue	4	1969	1,000.00	1,000.00
United States of America	Treasury	2½	1960	24,350.00	25,000.00
"	Treasury	2½	1959-62	55,860.00	60,000.00
"	Treasury	2½	1959-62	18,480.00	20,000.00
"	Treasury	2½	1963	45,900.00	49,000.00
"	Treasury	2½	1961	76,720.00	80,000.00
"	Treasury	2½	1959	29,940.00	30,000.00
"	Notes	3½	1966	48,300.00	50,000.00
"	Savings K	2.76	1959	99,510.00	99,510.00
"	Bills	2.80	1959	99,342.00	99,241.67
"	Bills	3	1959	548,652.00	563,751.67

CERTIFICATES OF INTEREST.....	Texas American Syndicate, 1395 shares.....	1.00	1.00
TOTALS—EXHIBIT A.....		548,653.00	563,752.67

TRUST NOTE RECEIVABLE
N. Papanicolas—Secured by 1225 New York Avenue, NW. Due June 17, 1962. Interest 5%—Exhibit A..... 71,807.23

ASSETS OF LOAN FUNDS

August 31, 1959

— 43 —

Funds	Total	Cash	Loans Receivable	U. S. Bonds
Hines	17,306.53	3,579.75	13,726.78	
Home Economics	382.35	382.35		
Kellogg	20,852.43	5,766.27	15,086.16	
Law Association	2,527.64	1,404.23	1,123.41	
National Defense	44,666.00	1,870.13	12,996.00	29,799.87
Pfizer	1,046.61	446.61	600.00	
Schoenfeld	2,076.59	1,400.21	676.38	
School of Medicine	15,623.91	5,279.62	10,344.29	
Sutherland	1,634.82	679.63	955.19	
University	9,419.43	9,237.43	182.00	
Totals—Exhibit A	115,536.31	30,046.23	55,690.21	29,799.87

SCHEDULE 4

ASSETS OF ENDOWMENT FUNDS

August 31, 1959

CONSOLIDATED ENDOWMENT FUNDS

	Description	%	Due	Value	
				Market	Book
Bonds					
American Telephone and Telegraph Co.	Debenture	3 7/8	1990 53,000	45,580.00	54,300.00
"	Debenture	5	1983 50,000	51,000.00	50,600.00
Atchafalpa, T. & P. and Santa Fe Ry. Co.	General Mortgage	4	1995 2,000	1,800.00	2,000.00
Bancroft Finance Co.	Debenture	5	1977 50,000	49,500.00	48,700.00
Boston Edison Co.	First Mortgage D	3 1/2	1982 30,000	24,000.00	30,300.00
"	First Mortgage F	4 1/2	1987 50,000	49,500.00	50,600.00
Central Maine Power Co.	First and General Mortgage W	4 7/8	1987 49,000	48,020.00	48,100.00
C. I. T. Financial Corp.	Debenture	3 9/8	1970 35,000	31,150.00	34,700.00
Commercial Credit Co.	Notes	4 1/2	1974 35,000	33,250.00	34,600.00
Commonwealth Edison Co.	First Mortgage R	3 1/2	1986 50,000	43,500.00	49,600.00
Consolidated Edison Co. of N. Y.	First and Ref. Mortgage L	3 9/8	1986 50,000	43,000.00	49,900.00
Consolidated Natural Gas Co.	Debenture	4 1/2	1982 50,000	51,000.00	50,400.00
Consumers Power Co.	First Mortgage	3 1/2	1987 30,000	24,900.00	30,600.00
Dow Chemical Co.	Convertible Subordinated Deb.	3	1982 15,000	28,500.00	15,100.00
Federal Home Loan Banks	Notes	3 1/2	1963 100,000	95,000.00	100,000.00
"	Consolidated Notes	4 1/2	1960 50,000	49,950.00	50,000.00
Federal Land Banks	Consolidated Farm Loan	4 1/2	1967 72 50,000	47,850.00	50,000.00
"	Consolidated Farm Loan	4 1/2	1969 100,000	100,000.00	100,000.00

SCHEDULE 5—Page 1

Federal Nat'l Mfg. Ass'n Mgt. and Liq. Functions—Notes.....					3½	1960	10,000	9,870.00	10,000.00
Florida Power and Light Co.....					4½	1987	50,000	49,000.00	50,900.00
General Electric Co.....					3½	1976	50,000	45,000.00	50,000.00
General Motors Acceptance Corp.....					3½	1972	40,000	34,800.00	40,000.00
General Telephone Co. of California.....					5	1987	50,000	51,500.00	50,000.00
Georgia Power Co.....					5¼	1987	36,000	37,440.00	36,700.00
Great Northern Railway Co.....					4½	1976	25,000	23,500.00	25,000.00
Illinois Bell Telephone Co.....					2¾	1981	30,000	23,400.00	28,400.00
International Bank for Rec. and Dev.....					4¼	1978	34,000	31,620.00	33,500.00
Interstate Power Co.....					4½	1977	50,000	48,500.00	50,000.00
Metropolitan Edison Co.....					5	1987	50,000	50,500.00	50,000.00
National Fuel Gas Co.....					4¾	1987	50,000	50,000.00	50,600.00
New Jersey Bell Telephone Co.....					5½	1982	15,000	15,600.00	15,100.00
New York Central Railroad Co.....					3½	1988	25,000	19,000.00	25,100.00
New York State Electric and Gas Corp.....					4½	2013	30,000	19,200.00	25,200.00
New York Telephone Co.....					4½	1987	50,000	49,500.00	50,600.00
Northern Natural Gas Co.....					4½	1991	50,000	48,000.00	50,700.00
Northern States Power Co.....					4½	1976	50,000	48,500.00	50,000.00
Northwestern Bell Telephone Co.....					4½	1987	49,000	48,510.00	49,000.00
Pacific Gas and Electric Co.....					4¾	1989	50,000	47,500.00	50,300.00
Pacific Telephone and Telegraph Co.....					5	1989	50,000	51,500.00	50,300.00
					5½	1980	50,000	52,000.00	51,100.00

ASSETS OF ENDOWMENT FUNDS (Continued)

August 31, 1959

CONSOLIDATED ENDOWMENT FUNDS (Continued)

	C	DESCRIPTION	DUE	VALUE		BOOK
				PAR	MARKET	
Bonds (Continued)						
Pennsylvania Railroad Co.....	4 1/4	General Mortgage B.....	1984	25,000	18,500.00	26,100.00
	4 1/2	Consolidated Mortgage	1960	1,000	1,000.00	1,000.00
Potomac Edison Co.....	4 5/8	First Mortgage Collateral Trust	1987	50,000	48,000.00	48,600.00
Potomac Electric Power Co.....	3 5/8	First Mortgage	1991	40,000	34,400.00	39,700.00
Procter and Gamble Co.....	3 7/8	Debenture	1981	35,000	32,550.00	35,000.00
Public Service Co. of Colorado.....	4 3/8	First Mortgage	1987	50,000	47,000.00	50,000.00
Public Service Electric and Gas Co.....	4 3/8	First and Refunding Mortgage	1986	50,000	49,000.00	50,500.00
Radio Corporation of America	3 1/2	Convertible Subordinated Deb.....	1980	50,000	63,000.00	54,900.00
R. J. Reynolds Tobacco Co.....	3	Debenture	1973	30,000	24,900.00	30,000.00
Sears Roebuck Acceptance Corp.....	4 5/8	Debenture	1972	50,000	49,000.00	49,800.00
Service Pipe Line Co.....	4 3/4	Sinking Fund Debenture	1983	100,000	100,000.00	100,000.00
Southern Bell Telephone Co.....	3 1/2	Sinking Fund Debenture	1982	25,000	21,250.00	25,000.00
Southern California Gas Co.....	5	Debenture	1986	50,000	51,000.00	51,000.00
Southern Railway Co.....	5 1/8	First Mortgage C.....	1983	48,000	48,960.00	48,768.00
State Loan and Finance Corp.....	5	First Consolidated Mortgage.....	1994	1,000	1,020.00	1,100.00
Tennessee Gas Transmission Co.....	3 3/4	Sinking Fund Debenture.....	1966	5,000	4,800.00	5,000.00
United Gas Corp.....	5 3/4	Subordinated Deb. Reg.....	1978	20,000	19,600.00	20,000.00
	4 3/4	Debenture.....	1974	24,000	21,120.00	24,300.00
	4 3/4	First Mortgage Pipe Line.....	1976	25,000	24,500.00	25,000.00
	4 3/8	Sinking Fund Debenture.....	1972	18,000	17,100.00	18,200.00
	4 1/2	First Mortgage Collateral Trust	1977	48,000	47,040.00	48,500.00

United States of America.....	Treasury.....	2 1/4	1959-62	30,000	27,930.00	30,000.00
"	Treasury.....	2 1/2	1961	56,000	53,144.00	55,900.00
"	Treasury.....	2 1/2	1967-72	8,000	6,568.00	7,950.00
"	Treasury.....	2 5/8	1965	20,000	17,980.00	20,000.00
"	Treasury B Reg.....	2 3/4	1975-80	10,000	8,660.00	10,000.00
"	Treasury.....	3 1/4	1985	60,000	51,620.00	60,200.00
"	Treasury.....	4	1969	99,000	95,535.00	99,000.00
"	Treasury.....	4	1980	150,000	145,200.00	148,400.00
"	Treasury.....	3 1/2	1990	200,000	175,600.00	200,000.00
"	Savings K.....	2.76	1966	50,000	48,300.00	50,000.00
"	Treasury Notes.....	3 1/2	1959	50,000	49,900.00	50,000.00
"	Treasury Notes.....	4	1961	256,000	254,208.00	256,000.00
"	Treasury Notes.....	4	1962	100,000	99,700.00	100,000.00
"	Treasury Notes.....	4	1963	75,000	73,725.00	75,000.00
"	General Mortgage.....	5	1960	12,000	12,000.00	12,000.40
"	Refunding Mortgage.....	5	1982	51,000	51,510.00	51,000.00
Western Massachusetts Electric Co....	First Mortgage C.....	4 3/4	1987	50,000	49,000.00	49,900.00
West Shore Railroad Co.....	Guaranteed First Mortgage Reg.	4	2361	26,000	14,560.00	22,800.00
Wisconsin Telephone Co.....	Debenture.....	4 1/2	1992	50,000	48,000.00	50,500.00
					<u>3,678,560.00</u>	<u>3,843,148.40</u>

ASSETS OF ENDOWMENT FUNDS (Continued)

August 31, 1959

CONSOLIDATED ENDOWMENT FUNDS (Continued)

	DESCRIPTION	RATE OR %	SHARES	VALUE	
				MARKET	BOOK
STOCKS—PREFERRED					
American Smelting and Refining	Cumulative	7	120	16,800.00	17,496.70
Appalachian Electric Power Co.	Cumulative	4½	100	9,000.00	10,600.00
Atchafalaya and Santa Fe Ry. Co.	Non-Cumulative	5	600	6,000.00	5,987.50
Cleveland and Pittsburgh R. R. Co.	Guaranteed	7	100	6,300.00	8,500.00
Connecticut Light and Power Co.	Cumulative	\$2.20	400	17,600.00	21,008.32
Consolidated Edison Co. of New York ..	Cumulative	\$5.00	300	30,300.00	32,386.17
Corning Glass Works	Cumulative	3½	240	20,640.00	24,000.00
Detroit, Hillsdale and S. W. R. R.	Guaranteed	4	163	9,617.00	10,432.00
General Motors Corporation	Cumulative	\$3.75	200	16,400.00	20,000.00
General Telephone Co. of Florida	Cumulative	\$5.00	100	10,600.00	12,525.25
Genesco, Inc.	Cumulative B	\$1.30	1,000	27,000.00	25,000.00
Gold and Stock Telegraph Co.	Cumulative	\$3.50	50	3,800.00	5,180.00
Gulf Power Co.	Guaranteed	6	100	20,100.00	11,700.00
	Cumulative	4.64	100	9,000.00	10,300.00

H. & J. Heinz Co.	Cumulative	3.65	200	16,000.00	20,550.00
International Harvester	Cumulative	7	100	14,600.00	18,204.43
May Department Stores Co.	Cumulative	33.4	50	3,750.00	5,150.00
May Department Stores Co.	Cumulative	\$3.75	200	15,400.00	20,700.00
McCray McClellan Stores Corp.	Cumulative Convertible	31.2	200	16,000.00	20,670.70
Merck and Co.	Cumulative	\$3.50	102	7,875.00	10,497.50
Pacific Gas and Electric Co.	Redeemable First, Par Value \$25	4.8	1,000	24,000.00	27,250.00
Pacific Lighting Corp.	Cumulative Convertible	\$4.75	300	39,000.00	29,700.00
Pittsburgh Eastern Pipe Line	Cumulative	4	200	18,300.00	20,172.40
Pennsylvania Electric Co.	Cumulative C	3.7	200	14,600.00	20,500.00
Philadelphia Electric Co.	Cumulative	3.8	100	8,300.00	10,270.00
Reynolds Metals Co.	Second Convertible	41.2	225	32,850.00	22,500.00
R. J. Reynolds Tobacco Co.	Cumulative	3.6	100	8,100.00	10,017.84
Rogers, George A., and Co.	Cumulative First	\$6.00	1	100.00	100.00
United States Steel Corp.	Cumulative	7	25	3,600.00	3,771.88
Virginia Electric and Power Co.	Cumulative	\$4.04	300	24,300.00	30,681.00
				449,832.00	485,851.69

ASSETS OF ENDOWMENT FUNDS (Continued)

August 31, 1959

CONSOLIDATED ENDOWMENT FUNDS (Continued)

	SHARES	VALUE	
		MARKET	BOOK
STOCKS—COMMON			
Allis-Chalmers Manufacturing Co.....	1,000	38,000.00	21,347.00
Aluminium Co. of Canada, Ltd.....	2,640	89,760.00	106,170.00
American Cyanamid Co.....	600	36,000.00	22,252.44
American Electric Power Co.....	1,127	56,350.00	13,587.71
American Home Products.....	38	6,422.00	3,040.00
American Metal Climax, Inc.....	1,627	40,675.00	45,334.94
American Telephone and Telegraph Co.....	1,236	98,880.00	65,361.70
American Tobacco Co.....	50	5,050.00	4,971.88
Chrysler Corporation.....	220	15,180.00	12,947.75
Cincinnati Gas and Electric Co.....	131	4,192.00	4,634.13
Cleveland Electric Illuminating Co.....	50	2,550.00	2,462.50
Coca-Cola Co.....	200	30,800.00	24,294.55
Columbian Carbon Co.....	300	15,000.00	14,215.85
Commercial Credit Co.....	500	32,500.00	20,163.14
Commonwealth Edison Co.....	1,207	74,834.00	29,527.14
Consolidated Natural Gas Co.....	500	26,500.00	25,051.39
Continental Can Co.....	88	4,312.00	3,348.32
Continental Illinois National Bank and Trust Co. of Chicago.....	449	57,023.00	16,893.78
Continental Insurance Co.....	440	22,880.00	18,088.35

Continental Oil Co.	840	46,200.00	9,211.44
duPont (E. I.) de Nemours.	106	28,408.00	15,688.25
Eastman Kodak Co.	694	63,154.00	13,241.52
Firstamerica Corporation	1,000	27,000.00	17,755.00
First National City Bank (New York)	224	19,488.00	14,721.03
Ford Motor Co.	500	41,500.00	32,250.00
General American Transportation Corp.	800	48,800.00	27,060.34
General Electric Co.	320	26,240.00	6,581.25
General Motors Corp.	3,522	200,754.00	42,719.93
Goodyear Tire and Rubber Co.	1,060	139,920.00	16,414.63
International Nickel Co. of Canada, Ltd.	200	20,000.00	12,035.25
Kennecott Copper Corporation.	306	30,600.00	18,812.50
Marine Midland Corporation.	2,100	54,600.00	29,047.05
Montanto Chemical Co.	700	37,100.00	20,185.79
National Dairy Products Corp.	75	3,900.00	3,717.19
National Fuel Gas Co.	1,650	39,600.00	34,979.49
New York Air Brake Co.	400	13,200.00	8,646.84
Ohio Oil Co.	600	24,600.00	20,218.97
Owens-Illinois Glass Co.	100	9,700.00	9,112.50
Panhandle Eastern Pipe Line.	400	20,000.00	14,684.95
Peoples Drug Stores, Inc.	400	18,000.00	14,585.20
Pfizer, Chas., and Co., Inc.	1,071	38,556.00	15,219.02
Phelps Dodge Corp.	600	34,800.00	19,207.25

ASSETS OF ENDOWMENT FUNDS (Continued)

August 31, 1959

CONSOLIDATED ENDOWMENT FUNDS (Continued)

STOCKS - COMMON (Continued)	SHARES	VALUE	
		MARKET	BOOK
Putnam Electric Power Co.	1,600	43,200.00	41,445.58
Public Service Electric and Gas Co.	500	19,000.00	15,992.09
Reliable Stores Corp.	550	9,900.00	8,721.43
R. J. Reynolds Tobacco Co.	200	11,600.00	5,112.50
Riggs National Bank (Washington, D. C.)	713	114,080.00	62,463.37
Security Storage Co. of Washington	335	12,395.00	5,058.50
S. C. W. M. Oil Co., Inc.	2,104	92,576.00	27,962.97
Southern California Edison Co.	853	51,180.00	26,091.55
Standard Oil Co. of California	1,697	88,244.00	22,576.46
Standard Oil Co. of New Jersey	225	11,475.00	11,432.81
Suburban Trust Co.	360	23,040.00	20,880.00
Sunray Mid-Continent Oil Co.	1,155	28,875.00	25,300.00
Transamerica Corporation	1,000	33,000.00	24,686.90
Travelers Insurance Co.	1,000	93,000.00	16,045.68
Union Carbide Corporation	45	6,435.00	3,802.50
United Gas Corporation	915	32,940.00	16,922.35
Virginia Electric and Power Co.	410	15,880.00	14,512.50
Woolworth, F. W., Co.	420	24,360.00	20,541.27
Wm. Wrigley Jr., Co.	10	860.00	707.50
		<u>2,354,768.00</u>	<u>1,240,013.92</u>

TOTAL STOCKS AND BONDS

6,482,960.00

5,569,014.01

TRUST NOTES RECEIVABLE

Crowe, F. C.—Secured by 16.0 acres of land in Pemiscot County, Missouri. Due \$3,954.46 each December 15 until paid in full	4	11,908.93
Gardner, A. S.—Secured by 1631 L Street, NW. Due \$80 including interest the 18th of each month	4½	6,811.27
Maxwell, C. D. G.—Secured by 147 Carroll Street, SE. Due \$64 including interest the 10th of each month	4½	6,177.49
Newton, F.—Secured by 807 Villa Ridge Road, Falls Church, Virginia. Due \$75 including interest the 15th of each month	4½	6,473.01
Shryack, H. S.—Secured by 3420 Fairhill Drive, Fairfield, Maryland. Due \$64 including interest the 23rd of each month	4	183.98
Stephens, F. F.—Secured by 4321 20th St., NE. Due \$90 including interest the 28th of each month	5	10,756.60
		<u>42,311.28</u>
CASH.....		4,458.03

TOTALS { Consolidated Endowment Funds	5,704,293.21
{ Reserve for Protection of Consolidated Endowment Funds Investments	<u>99,670.11</u>
	5,803,963.32

ASSETS OF ENDOWMENT FUNDS (Continued)

August 31, 1959

SCOTTISH RITE FUND

BONDS	DESCRIPTION	%	DUE	VALUE		
				PAR	MARKET	
					BOOK	
American Telephone and Telegraph Co.	Debenture.....	2½	1980	25,000	19,000.00	25,000.00
Federal National Mfg. Ass'n Mkt. & Liq.	Functions—Notes.....	3½	1960	10,000	9,870.00	10,000.00
International Bank for Rec. and Dev.	Twenty-one years.....	4½	1978	16,000	14,880.00	15,800.00
Lexington and Eastern Railway Co.	First Mortgage.....	5	1965	12,000	12,000.00	12,300.00
Northern Pacific Railway Co.	Prior Lien Railway and Land Grant	4	1997	25,000	21,250.00	26,400.00
State Loan and Finance Corporation	Sinking Fund Debenture.....	3½	1966	20,000	19,200.00	20,000.00
State Loan and Finance Corporation	Sinking Fund Sub. Deb. Reg.....	5½	1978	5,000	4,900.00	5,000.00
Tennessee Gas Transmission Co.	Debenture.....	4½	1974	15,000	13,200.00	15,100.00
United States of America	Treasury.....	2½	1959-62	72,000	67,032.00	72,000.00
"	Treasury.....	3½	1978-83	50,000	43,150.00	50,000.00
"	Treasury B.....	2½	1975-80	25,000	21,650.00	25,000.00
"	Treasury.....	3½	1985	6,000	5,166.00	6,000.00
"	Treasury.....	3½	1990	25,000	21,950.00	25,000.00
"	Savings G.....	2½	1962	40,000	38,800.00	40,000.00
"	Treasury.....	4	1969	25,000	24,125.00	25,000.00
"	Treasury Bills.....	3.98	1960	96,000	92,476.00	92,476.37
"	Treasury Notes.....	4	1963	25,000	24,575.00	25,000.00
Washington Gas Light Co.	General Mortgage.....	5	1960	14,000	14,000.00	14,100.00
West Shore Railroad Co.	Guaranteed First Mortgage Reg..	4	2361	14,000	7,840.00	12,500.00
					475,064.00	516,676.37

STOCKS - PREFERRED

		RATE OR %	SHARES			
Baltimore Gas and Electric Co.	Cumulative C	4	130	10,920.00	13,312.73	
Celanese Corporation of America	Cumulative A	4½	200	17,200.00	20,081.50	
General Motors Corporation	Cumulative	\$3.75	40	3,280.00	4,000.00	
Genesco, Inc.	Cumulative	\$3.50	50	3,800.00	5,120.50	
Gulf Power Co.	Cumulative	4.64	100	9,000.00	10,300.00	
Illinois Power Co.	Cumulative, Par Value \$50	4.26	400	17,200.00	20,600.00	
International Harvester Co.	Cumulative	7	50	7,300.00	9,124.08	
May Department Stores	Cumulative	3¾	150	11,250.00	15,450.00	
Montgomery Ward and Co.	Cumulative A	\$7	100	15,000.00	20,535.65	
Pacific Telephone and Telegraph Co.	Cumulative	6	200	27,000.00	27,276.40	
Philadelphia Electric Co.	Cumulative	3.8	100	8,300.00	10,270.00	
Philip Morris and Co., Ltd., Inc.	Cumulative	4	138	11,316.00	14,007.00	
R. J. Reynolds Tobacco Co.	Cumulative	3.60	200	16,200.00	20,018.77	
				157,746.00	190,096.63	

ASSETS OF ENDOWMENT FUNDS (Continued)

August 31, 1959

SCOTTISH RITE FUND (Continued)

	SHARES	VALUE	
		MARKET	BOOK
STOCKS—COMMON			
American Telephone and Telegraph Co.	918	73,400.00	45,791.36
Cincinnati Milling Machine Co.	1,000	42,000.00	18,609.10
Commonwealth Edison Co.	1,034	64,108.00	23,472.60
Continental Oil Co.	2,000	110,000.00	15,145.46
Ford Motor Co.	150	12,450.00	9,675.00
General Electric Co.	1,200	98,400.00	17,210.00
Goodyear Tire and Rubber Co.	917	121,044.00	10,371.36
International Nickel Co. of Canada, Ltd.	300	30,000.00	13,032.50
May Department Stores	463	22,687.00	14,588.25
Montgomery Ward and Co.	1,500	79,500.00	32,577.25
New York State Electric and Gas Corp.	580	31,350.00	22,025.15
Panhandle Eastern Pipe Line	300	15,000.00	10,963.94
Pfizer, Chas., and Co., Inc.	357	12,852.00	5,073.00
Riggs National Bank (Washington, D. C.)	695	111,200.00	32,599.26
Standard Oil Co. of California	486	25,273.00	2,591.38
Standard Oil Co. of New Jersey	3,216	164,016.00	37,435.66
Union Carbide Corporation	900	128,700.00	25,122.50
United Gas Corporation	770	27,720.00	13,851.66
		<u>1,169,739.00</u>	<u>350,135.43</u>
TOTAL STOCKS AND BONDS		<u>1,802,569.00</u>	<u>1,056,908.43</u>
CASH			<u>741.93</u>
		1,000,000.00	1,057,650.36
		57,650.36	

Assets of Endowment Funds of Scottish Rite Investments

SUMMARY OF ASSETS OF ENDOWMENT FUNDS

August 31, 1959

INVESTMENTS	Total	CONSOLIDATED	SCOTTISH RITE
Bonds	4,359,824.77	3,843,148.40	516,676.37
Preferred Stocks	675,948.32	485,851.69	190,096.63
Common Stocks	1,590,149.35	1,240,013.92	350,135.43
	<u>6,625,922.44</u>		
Real Estate	188,180.00	188,180.00	
Trust Notes	42,311.28	42,311.28	
	<u>6,856,413.72</u>	<u>5,799,505.29</u>	<u>1,056,908.43</u>
Cash	<u>5,199.96</u>	<u>4,458.03</u>	<u>741.93</u>
TOTALS—EXHIBIT A	<u>6,861,613.68</u>	<u>5,803,963.32</u>	<u>1,057,650.36</u>

ENDOWMENT FUNDS—HELD IN TRUST BY OTHERS

August 31, 1959

FUNDS	TRUSTEES	BOOK VALUE
Andrews Scholarship Fund	American Security and Trust Co.	5,194.95
Coope Unrestricted Fund	Riggs National Bank	24,371.00
Fry Professorship Fund	National Savings and Trust Co.	105,880.00
Harvey Scholarship Fund	Riggs National Bank	4,650.63
Sanders Fellowship Fund	National Savings and Trust Co.	223,177.00
Sharpe School of Medicine Fund	National Savings and Trust Co.	8,216.79
Spencer Scholarship Fund	Northern Trust Co.	7,422.20

TOTAL—EXHIBIT A 378,882.57

August 31, 1959

CONSOLIDATED PLANT FUNDS

BONDS	Description	C%	Due	Value	
				PAR	BOOK
United States of America	Savings G.	2½	1961	3,600	3,600.00
"	Savings K.	2.76	1966	4,000	3,864.00
"	Notes	4½	1960	55,000	4,000.00
					55,000.00
Cash					62,443.00
					62,443.00
TOTAL					8,216.99
					70,816.99

LAW CENTER FUND

BONDS	Description	C%	Due	Value	
				PAR	BOOK
Beneficial Industrial Loan Corp.	Debenture	2½	1961	35,000	35,000.00
Federal Land Banks	Consolidated Farm Loan	2½	1960	15,000	14,835.00
Federal National Mortgage Ass'n Mgt. and Inv. Functions	Notes	3½	1960	50,000	49,350.00
United States of America	Savings G.	2½	1961	15,000	14,685.00
"	Notes	3½	1961	30,000	29,610.00
					30,000.00
					142,080.00
					145,000.00

Stocks—COMMON

Stocks—COMMON	Description	Shares	Value
Houston Oil Co. of Texas—Liquidating		40	1.00
Cash			9,694.20
TOTAL			154,695.20

SCHEDULE 7—PAGE 1

FORD FOUNDATION HOSPITAL BUILDING FUND

BONDS	Federal National Mortgage Ass'n Mgt. and Liq. Functions—Notes.....	3½	1960	113,000	111,531.00	113,000.00
	United States of America.....	4	1961	113,000	112,209.00	113,000.00
	Notes.....	4	1960	20,000	19,940.00	20,000.00
	Certificates of Indebtedness.....	4			243,680.00	246,000.00
CASH.....					1,634.64	
TOTAL.....						247,634.64

SUMMARY OF ASSETS OF PLANT FUNDS

August 31, 1959

INVESTMENTS	TOTAL	August 31, 1959		
		CONSOLIDATED	FORD	PAIRO
Bonds.....	464,800.00	62,600.00	246,000.00	11,200.00
Common Stocks.....	9,134.59			
	473,934.59	62,600.00	246,000.00	9,133.59
CASH.....	39,835.97	8,216.99	1,634.64	20,290.14
TOTALS—EXHIBIT A.....	513,770.56	70,816.99	247,634.64	40,623.73

LAND AND BUILDINGS

For the Year Ended August 31, 1959

Building or Location	Lot	Square	Year Acquired or Erected	Balance August 31, 1958	Net Additions	Balance August 31, 1959
Adams Hall	824	120	1957	640,718.60	16,959.84	657,678.44
Alumni Office	23	56	1954	15,000.00		15,000.00
Bacon Hall	39	102	1956	282,672.21	13,421.72	296,093.93
Biological Sciences Building C	Part of 834	102	1914-35	151,129.97		151,129.97
Book Store	Part of 843	79	1949	48,105.49		48,105.49
Cancer Clinic*	1-2-801-802	39	1948-52	472,513.53	72,442.81	544,956.34
Cemetery Lot	343	52-56	1884	1.00		1.00
Chapin Hall	Part of 838	79	1948	85,301.23		85,301.23
Chemistry Storage Vault	Part of 834	102	1958	33,770.90	30,204.91	63,975.81
Classroom - Research Building, G Street	50			40,000.00		40,000.00
Corcoran Hall	Part of 834	102	1919-24	327,481.92	23,017.04	350,498.96
Faculty Parking Lot 14-16-17-18-19-20-24-25-26-27-28-29		56	1936	236,431.05		236,431.05
800-801-802-805-823-828-829-830-832-833-834						
Field House Site 11-17-19-20-27-28-35-36-37-38-39-42-800-						
801-806-807-808-809-816-817-826-827-830						
Gymnasium	Part of 834	57	1956	339,352.97	34,711.00	374,063.97
Hall of Government		102	1924-25	58,331.44		58,331.44
Hospital	845-846	79	1918-38	329,745.14		329,745.14
Hospital Parking Lot 34-35-801 thru 808-810 thru 815-824	Entire Square	54	1945	7,670,188.64	12,341.29	7,682,529.93
827-828-830-831-833-834		40	1949	252,653.86		252,653.86
Law Center Building			1955	4,534.34		4,534.34
Linier Auditorium	828-838-843	79	1929-41	879,976.91	3,497.44	883,474.35
Linier Library	Part of 834	102	1912-39	384,029.52	1,497.42	385,526.94
Madison Hall	840	56	1957	595,126.75	5,686.35	600,813.10
Science Hall	844	79	1936-51	711,917.60		711,917.60

SCHEDULE 8—PAGE 1

Nurses Home.	844	55	1947	401,500.00	401,500.00
Pharmacology Laboratory.	27-28-816-817	79	1944	100,091.18	100,091.18
Physics Laboratory.	Part of 843	79	1947	26,075.12	26,075.12
President's Office.	Part of 834	102	1936	11,700.00	11,700.00
Samson Hall.	Part of 834	102	1923-30	74,885.92	103,331.02
School of Medicine.	43	250	1882-1932	995,706.34	1,005,160.10
Shop, Stockroom.	53	101	1943	26,761.24	26,761.24
Social Sciences Building D.	Part of 834	102	1922-36	543,305.70	543,305.70
Sorority Hall - 2112 G Street, NW.	816	80	1948	30,000.00	30,000.00
" 2129 G Street, NW.	805	79	1936	36,989.72	36,989.72
" 2131 G Street, NW.	Part of 8	79	1935	25,500.00	25,500.00
Staughton Hall.	35	77	1938	13,000.00	13,000.00
Stockton Hall.	834-835	79	1941	62,574.67	62,574.67
Student Activities Building.	Part of 834	102	1920-25	279,325.93	3,730.51
Student Parking Lot--2314 I St., NW.	41	79	1947	75,000.00	75,000.00
Student Union Building.	831	41	1945-53	618,787.43	618,787.43
Tompkins Engineering Building.	804-836	79	1947-48	528,057.96	528,057.96
Welling Hall.	843	56	1953	843,527.55	843,527.55
	15	55	1947	209,047.72	209,047.72

LAND AND BUILDINGS (Continued)

For the Year Ended August 31, 1959

Building or Location	Lot	Square	Year Acquired or Improved	Balance August 31, 1958	Net Additions	Balance August 31, 1959
G Street, NW--1910	C	121	1949	20,000.00		20,000.00
" 2002.....	27	103	1949	33,600.00		33,600.00
" 2024.....	16	103	1922	14,955.00		14,955.00
" 2026.....	15	103	1929	15,074.96		15,074.96
" 2030.....	13	103	1957	21,000.00		21,000.00
" 2033.....	Part of 834	102	1922	32,500.00		32,500.00
" 2106.....	817	80	1937	19,000.00		19,000.00
" 2108.....	41	80	1946	31,500.00		31,500.00
" 2110.....	40	80	1949	69,479.23		69,479.23
" 2114.....	815	80	1949	47,250.00		47,250.00
" 2116.....	A	80	1946	20,500.00		20,500.00
" 2118.....	B	80	1946	17,500.00		17,500.00
" 2135.....	807	79	1943	14,000.00		14,000.00
" 2220.....	26	57	1956	7,800.00		7,800.00
" 2222.....	25	57	1948	8,800.00		8,800.00
" 2313-15-17-19-21	803-829	42	1947	23,400.00		23,400.00
H Street, NW--1909	800	119	1948	32,500.00		32,500.00
" 1911-13.....	3	119	1948	67,711.70		67,711.70
" 1921.....	802	119	1952	32,500.00		32,500.00
" 1923.....	803	119	1949	38,000.00		38,000.00
" 2001.....	55-84, 840 thru 805	101	1950	180,307.20		180,307.20
" 2011.....	806	101	1943	13,000.00		13,000.00

2017	810	101	1954	25,000.00	.....	25,000.00
2020	Part of 834	102	1922	98,516.71	.....	98,516.71
2023	51	101	1954	12,000.00	.....	12,000.00
2025	52	101	1945	21,000.00	.....	21,000.00
2027	813	101	1941	11,000.00	.....	11,000.00
2029	814	101	1945	11,500.00	.....	11,500.00
2031	815	101	1948	13,000.00	.....	13,000.00
2037	817	101	1940	23,500.00	.....	23,500.00
2107 09	800-801	77	1956	42,246.31	.....	42,246.31
2113	802 804-805	77	1940	42,431.25	.....	42,431.25
2125	808	77	1954	21,000.00	.....	21,000.00
2127	809	77	1946	7,500.00	.....	7,500.00
2136	53 thru 59	79	1951	85,000.00	.....	85,000.00
2137	810-811	77	1948	30,500.00	.....	30,500.00
2142	D	79	1935	1,500.00	.....	1,500.00
2142 1/2	815	79	1940	3,000.00	.....	3,000.00
2207	B	55	1959	13,000.00	.....	13,000.00
2209	804	55	1945	6,650.00	.....	6,650.00
2211	16	55	1948	16,125.00	.....	16,125.00
2213	17	55	1946	13,000.00	.....	13,000.00
2217	18-19-805	55	1944	32,500.00	.....	32,500.00
2300	817	42	1942	10,750.00	.....	10,750.00
2308	43	42	1948	7,900.00	.....	7,900.00
2312	814	42	1948	7,000.00	.....	7,000.00
2316	812	42	1947	9,600.00	.....	9,600.00
2318	811	42	1955	7,000.00	.....	7,000.00
2324	809	42	1956	4,000.00	.....	4,000.00

LAND AND BUILDINGS (Continued)

For the Year Ended August 31, 1959

Building or Location	Lot	Square	Year Acquired or Erected	Balance August 31, 1958	Net Additions	Balance August 31, 1959
I Street, NW—2012	829-830-831	101	1945	68,000.00		68,000.00
" 2018	21	101	1946	50,000.00		50,000.00
" 2038	840	101	1942	10,000.00		10,000.00
" 2106	27	77	1947	11,800.00		11,800.00
" 2114	55-56-833-834	77	1947	39,650.00		39,650.00
" 2119	807	75	1957	6,500.00		6,500.00
" 2130-32	828-829	77	1958		36,000.00	36,000.00
" 2136	826	77	1948	15,000.00		15,000.00
" 2138	825	77	1945	5,000.00		5,000.00
" 2200	24	55	1959		28,500.00	28,500.00
" 2204	22	55	1949	12,000.00		12,000.00
19th Street, NW—804	22	119	1958	2,000.00		2,000.00
" 808	20	119	1949	30,000.00	25,500.00	30,000.00
20th Street, NW—700	Part of 834	102	1931	17,500.00		17,500.00
" 706	23	102	1950	36,870.03		36,870.03
" 712	Part of 834	102	1929	14,240.00		14,240.00
" 714	Part of 834	102	1930	14,500.00		14,500.00
" 716	Part of 834	102	1929	13,500.00		13,500.00
" 718	Part of 834	102	1929	20,000.00		20,000.00
" 804	Part of 834	119	1959			

21st Street, NW-604	23	80	1945	13,000.00	13,000.00	13,000.00
606-08	21-22	80	1935	12,500.00	12,500.00	12,500.00
713-15-17	Part of 834	102	1929	53,500.00	53,500.00	53,500.00
714	Part of 841	79	1931	40,000.00	40,000.00	40,000.00
716	Part of 841	79	1933	8,885.00	8,885.00	8,885.00
718	Part of 841	79	1939	16,422.00	16,422.00	16,422.00
806	33	77	1959	17,500.00	17,500.00	17,500.00
810	31	77	1938	9,000.00	9,000.00	9,000.00
812	841	77	1954	21,000.00	21,000.00	21,000.00
814	840	77	1944	13,000.00	13,000.00	13,000.00
22nd Street, NW	24	79	1939	8,190.00	8,190.00	8,190.00
715	25	79	1940	10,143.00	10,143.00	10,143.00
717	810	79	1952	20,000.00	20,000.00	20,000.00
719	812-813	79	1938	8,750.00	8,750.00	8,750.00
725	814	79	1937	4,750.00	4,750.00	4,750.00
727	34	79	1945	7,600.00	7,600.00	7,600.00
731	802-803	79	1946	18,500.00	18,500.00	18,500.00
800-02	801	55	1956	16,500.00	16,500.00	16,500.00
804	800	55	1945	9,000.00	9,000.00	9,000.00
806	C	55	1946	14,000.00	14,000.00	14,000.00
808	839	55	1948	18,750.00	18,750.00	18,750.00
810	817-818-819	77	1948	35,800.00	35,800.00	35,800.00
817	831	55	1952	25,000.00	25,000.00	25,000.00
818	830	55	1945	7,000.00	7,000.00	7,000.00
820	829	55	1947	9,250.00	9,250.00	9,250.00
822	50	77	1956	9,500.00	9,500.00	9,500.00
835	815	75	1946	11,000.00	11,000.00	11,000.00
909	816	75	1950	12,000.00	12,000.00	12,000.00
911	850	75	1948	12,500.00	12,500.00	12,500.00
921	822	75	1958	50.00	50.00	50.00
923				800.00	800.00	800.00

LAND AND BUILDINGS (Continued)
For the Year Ended August 31, 1959

Building or Location	Lot	Square	Year Acquired or Erected	Balance August 31, 1958	Net Additions	Balance August 31, 1959
23rd Street, NW—611-13	29-821					
	822-824-825					
" 706	827	57	1948	13,500.00	.....	13,500.00
" 716	825	42	1942	3,675.00	.....	3,675.00
" 718	824	42	1944	7,425.00	.....	7,425.00
" 734	819	42	1949	11,095.00	.....	11,095.00
" 736	818	42	1942	4,500.00	.....	4,500.00
" 900	825	42	1942	3,000.00	.....	3,000.00
" 908	30	40	1958	.....	20,000.00	20,000.00
" 910	29	40	1953	17,750.00	.....	17,750.00
" 914	27	40	1957	16,500.00	.....	16,500.00
" 918	25	40	1957	20,000.00	.....	20,000.00
" 920	24	40	1957	23,000.00	.....	23,000.00
" 924	22	40	1959	.....	21,075.00	21,075.00
" 932	823	40	1957	16,500.00	.....	16,500.00
			1959	.....	10,975.00	10,975.00
24th Street, NW—737	807-808	42	1947	21,440.00	.....	21,440.00

EQUIPMENT

For the Year Ended August 31, 1959

	BALANCE AUGUST 31, 1958	ADDITIONS	BALANCE AUGUST 31, 1959
Adams Hall	39,976.45	2,448.76	42,425.21
Administration	378,125.46	63,232.19	441,357.65
Bookstores	12,785.10	258.50	13,043.60
Cancer Clinic	71,165.44	2,494.63	73,660.07
Faculty Dining Room	2,284.48	.....	2,284.48
Gymnasium	2,927.37	.....	2,927.37
Hospital	1,633,457.27	110,275.57	1,743,732.84
Human Resources Laboratory	48,324.48	.....	48,324.48
Instruction - General	227,825.32	8,231.99	236,057.31
" Law School	13,138.56	452.00	13,590.56
" School of Engineering	289,948.53	11,890.31	301,838.84
" School of Medicine	206,828.96	23,974.08	230,803.04
" School of Pharmacy	25,926.00	445.70	26,371.70
Interns Residence	4,302.62	.....	4,302.62
Library Books-General	369,715.41	30,200.36	399,915.77
" Law School	175,138.57	16,033.34	191,171.91
" School of Medicine	67,808.26	9,986.04	77,794.30

Linner Auditorium	94,844.28		94,844.28
Linner Library	60,807.45	6,934.47	67,741.92
Madison Hall	56,875.51	1,359.08	58,234.59
Motor Vehicles	4,352.01		4,352.01
Nurses Home	9,710.60		9,710.60
Strong Hall	18,200.00		18,200.00
Student Union	46,363.45		46,363.45
Welling Hall	59,949.64		59,949.64
	<u>3,920,781.22</u>	<u>288,217.02</u>	<u>4,208,998.24</u>

Less Depreciation - Cancer Clinic Equipment	10,500.00	4,500.00	15,000.00
" Hospital Equipment	1,174,000.00	130,000.00	1,304,000.00
	<u>1,184,500.00</u>	<u>134,500.00</u>	<u>1,319,000.00</u>

TOTAL - EXHIBIT A	2,736,281.22	153,717.02	2,889,998.24
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SCHEDULE 9

DESIGNATED CURRENT FUNDS—SPONSORED RESEARCH

For the Year Ended August 31, 1959

Funds	Balance August 31, 1958	Receipts	Disbursements			Balance August 31, 1959
			Salaries	Other Expense	Total	
SCHOOL OF MEDICINE						
Albion, Lilly, Upjohn	9,221.90	18,000.00	12,289.10	4,942.99	17,232.09	9,991.81
American Cancer Society—IN-7	1,549.71	3,118.57	751.64	2,805.58	3,557.22	1,131.06
IN-7A		8,287.92	1,084.95	135.00	1,219.95	7,067.97
T-14	877.44	(-597.23)		280.21	280.21	
T-14A		10,292.00	2,636.11	1,477.89	4,114.00	6,178.00
VI-19A	875.28	(-18.84)	518.25	318.19	836.44	
T-41	3,202.00		2,050.00	1,073.26	3,123.26	78.74
P-144	975.53	(-916.65)		58.88	58.88	
P-144A		4,907.00	1,471.22	1,435.02	2,906.24	2,000.76
E-1R24-J	581.22	(-41.20)	450.00	90.02	540.02	
Arthritis	32,676.42	27,875.28	16,107.56	9,707.58	25,815.14	34,736.56
Boston	2,343.88	5,060.00	872.50	6,469.50	7,342.00	61.88
Bristol-Meyers	435.57			5.24	5.24	430.33
Cancer Control	839.91					839.91
Cardiology—1	529.44					
Cardiology—2	1,710.00	(-329.44)				1,380.56
Ciba Pharmaceutical Products—1	518.98					518.98
2	79.37					79.37
3	445.58		434.93	10.65	445.58	
Cooper		4,508.82	4,090.00	418.82	4,508.82	
Damon Runyon Memorial—DRG-42-H	5,090.39		1,088.07	1,848.16	2,936.23	2,154.16
DRG-42-I		5,800.00				5,800.00
DRG-437	2,860.67		1,811.80	947.56	2,759.36	101.31
Davis and Gask	237.21					237.21
Decker Corp		6,800.00	4,800.00	1,157.06	5,957.06	42.94
Gray Pharmaceutical Co	460.380		320.00			140.380

	1,718.10	113.32			
Hematology.....	569.25	10.00			1,831.43
Hoffman-LaRoche Laboratories.....		5,430.00			579.25
Institute for the Study of Analgesic and Sedative Drugs.....	5,843.44				4,000.00
Johansen, Leslie W., Memorial.....	1,000.00	6,900.00	2,217.10	2,444.79	8,081.55
Kearney Chemical Corp.....	28.63				1,080.00
Laboratories for Pharmaceutical Development.....	339.05				14.39
Lechele Laboratories.....	121.77				266.24
Lewin-Hall Co.....	2,253.52				121.77
Life Insurance—G 59-7.....	10,687.14	10,574.38	481.56	1,440.00	1,921.56
Lilly Co.—2.....	74.77	(-5,184.38)	1,400.00	1,314.30	2,714.30
" " 1.....	1,084.43	5,635.00	2,902.92	2,599.84	5,502.76
" " 4.....	356.25		1,813.89	16.00	131.96
Merkel, Sharp, and Dobme.....	632.79	7.20	320.00	1,112.81	58.77
Meyer Foundation—Orthopedics.....	277.98	6,000.00	200.00	7.20	4,392.75
" Heart.....	106.39		3,000.00	176.26	29.05
" Initiation and Continuation.....	41.28			1,436.15	254.53
" Renal Project.....	9,477.38				1,841.83
Miles-Ames Laboratories.....	844.96			26.99	106.39
Mothers Health Clinic.....	465.51		1,312.13	4,200.59	14.29
Multiple Sclerosis—Center.....	1,360.55	10,200.00	330.00	5,532.92	3,944.46
" Society 5.....	50.40	95.50	842.83	350.13	164.83
" Society 6.....	250.17			7,694.12	2,128.56
" Association—Diagnostic Laboratory.....	5,327.69	3,251.92	2,766.64	53.40	1,402.65
National Drug Co.....	24.45	8,887.74	47.20	47.20	3.10
National Foundation—CPEP 99.....	95.20	3,000.00	5,679.92	737.45	1,057.61
" CPEP 99C.....	21,945.90	(-95.20)		2,150.21	3,718.65
National Science Foundation—G 4911.....	3,188.18	2,936.24		4,609.04	24.45
" 5805.....	4,700.00		17,602.51		24,261.86
			3,448.59	2,675.83	6,124.92
			1,122.86	2,948.26	6,071.12

DESIGNATED CURRENT FUNDS—SPONSORED RESEARCH (Continued)

For the Year Ended August 31, 1959

Fund	Balance August 31, 1958	Receipts	Disbursements			Balance August 31, 1959
			Salaries	Other Expense	Total	
Support or Maintenance (Continued)						
National Science Foundation 7074.....		6,300.00	1,010.32	2,430.23	3,440.55	2,859.45
		233.55		233.55	233.55	
Neurology.....	784.29					
Osteoarthritis and Osteoporosis.....	6,119.42	7,425.00		7.50	7.50	776.79
Parker Davis Co.—2.....	1,435.36			1,243.55	1,243.55	12,300.87
Retail Drug Co.....	3,299.35	5,000.00	4,098.08	836.98	4,935.06	1,435.36
Sandoz Pharmaceuticals, Inc.....	479.12			6.83	6.83	3,274.29
Schering.....	2,859.10	3,000.00	100.00	65.00	165.00	472.29
Schering 2.....						2,691.10
Schering, G. D. Co. 1.....	2,072.88	2,500.00	2,601.32	2,562.25	2,562.25	1,037.75
Schering 2.....	541.34			1,356.13	3,957.45	615.43
Schering 2.....	2,433.47	3,000.00		357.21	357.21	184.13
Schering 2.....			760.00	904.18	1,664.18	3,769.29
Schering 2.....		660.00				660.00
Schering 2.....	1,129.88	1,129.88				
Schering 2.....	523.82			228.24	228.24	295.58
Schering 2.....	356.91			356.91	356.91	
Schering 2.....		6,320.35	2,204.17	1,600.94	3,805.11	2,455.14
Schering 2.....	347.03					347.03
United States Air Force AF-18-600-463.....		98.00		33.00	33.00	
United States Army DA-49-007-MD-724.....		5,819.05	4,505.00	1,314.05	5,819.05	
United States Army DA-49-007-MD-1006.....		28,159.42		28,159.42	28,159.42	
United States Atomic Energy Commission—BM-23-58.....		(-579.84)		1,833.73	1,833.73	
United States Atomic Energy Commission—BM-72-59.....		8,449.00				8,449.00
United States Atomic Energy Commission—AT-30-1-1107.....		13,234.00	4,051.52	7,555.57	11,607.09	
United States Atomic Energy Commission—AT-30-1-1820.....		2,836.35	2,145.06	1,851.78	3,996.84	
United States Atomic Energy Commission—AT-30-1-2177.....		3,996.84	9,671.54	5,155.90	14,827.44	
		20,000.00				5,172.56

United States Navy—Nonr 761 02
Nonr 1848 00
Nonr 2779 00
United States Public Health Service

2G 26-S1

SP 172

CY 308 C11

CY 308 C12

E 314 C5

F 314 C6

F 319

A 408 C4

F 014 39

B 798 C2

A 839 C3

A 839 C4

A 852 C2

B 1070 C

A 1129 C

A 1129 C2

E 1101 C

F 1301 C2

B 1480

H 1739 C2

B 1838

H 1897 C3

H 1897 C4

A 1910

A 1949

A 1949 C

H 2031 C2

6,214.80	3,613.51	2,601.49	6,214.80
4,342.01	3,113.01	1,009.00	4,342.01
3,331.34	1,133.28	2,000.06	3,331.34
24,700.00	1,020.00	12,912.94	13,932.94
	8,019.51	1,243.86	9,268.39
5,415.79	6,120.00	2,942.68	9,062.68
6,544.21	2,040.00	662.50	2,702.50
(-2,181.94)		119.90	119.90
7,310.94	3,495.97	1,696.39	5,102.36
(-1,210.07)		3,240.00	3,240.00
5,184.00		98.81	98.81
(-243.13)		1,296.00	1,296.00
656.74		413.61	413.61
		27.72	27.72
4,965.29	4,200.00	1,781.28	5,981.28
144.89			
2,504.99			
3,008.56			
(-1,966.24)		57.00	57.00
7,714.24	4,629.96	1,104.32	1,104.32
(-3,695.26)		1,586.60	6,216.56
4,100.18		104.92	104.92
11,250.00	4,754.35	3,397.08	8,151.43
(-509.13)		(-474.29)	
(-7,466)		198.95	198.95
4,487.00	2,909.47	1,981.60	4,893.07
4,655.86		3,899.72	3,899.72
(-756.14)		3,037.92	3,037.92
8,806.14		122.21	122.21
(-10,552)		2,411.89	2,411.89
(-755.15)		4,951.47	4,951.47
8,374.35		105.52	105.52
(-8,451.72)			

SCHEDULE 10—PAGE 2

DESIGNATED CURRENT FUNDS—SPONSORED RESEARCH (Continued)

For the Year Ended August 31, 1959

Fund	Balance August 31, 1958	Receipts	Disbursements			Balance August 31, 1959
			Salaries	Other Expense	Total	
SCHOOL OF MEDICINE (Continued)						
United States Public Health Service—						
H-2033 C4.....	10,839.75	10,484.80	4,210.67	17,111.88	21,324.55	26,880.95
E-2073.....	17,250.00	16,925.00	4,611.35	2,680.70	7,294.05	9,949.79
H-2120-C2.....	998.59	16,416.00	2,546.25	(-97.25)	6,466.21	1,832.41
H-2120-C3.....	7,970.00	(-1,095.84)	.....	3,129.43	15,204.43	5,668.29
A-2205.....	.....	9,066.84	12,075.00	9,616.68	15,826.71	782.38
A-2214.....	.....	21,495.00	6,210.03	2,245.62	5,875.62	.....
H-2274-C2.....	3,713.85	6,658.00	3,630.00	3,706.86	3,706.86	.....
H-2274-C3.....	11,157.00	(-6.99)	.....	5,421.48	19,100.91	3,220.08
CY-2320-C3.....	12,164.91	11,163.99	13,679.43	.....	.....	.....
CY-2320-C4.....	23,546.77	30,220.12	22,324.12	19,478.69	41,802.81	11,964.08
CY-2320-C5.....	798.57	36,456.91	6,587.50	2,459.43	9,046.93	27,409.98
H-2335-C.....	4,486.01	(-625.83)	3,072.33	172.74	172.74	.....
E-2453-A.....	.....	4,764.82	595.00	3,214.78	6,287.11	2,903.72
C-2505-C.....	943.79	2,298.00	.....	1,618.73	2,213.73	84.27
E-2526.....	.....	(-888.93)	952.17	54.86	54.86	.....
CY-2684-C.....	1,607.70	7,891.93	1,050.00	419.71	1,383.14	6,508.79
H-2731-C.....	4,921.90	4,974.00	.....	1,184.89	1,469.71	3,504.29
H-2731-C2.....	.....	(-422.81)	3,581.70	1,340.20	1,184.89	.....
H-2746-C.....	3,775.95	10,523.00	1,706.05	344.49	2,080.54	8,472.46
C-2754-C.....	1,268.00	(-647.08)	.....	3,128.87	3,128.87	.....
C-2754-C2.....	5,831.00	12,147.08	.....	6,479.82	6,479.82	5,667.26
C-2754-C3.....	.....	(-1,102.98)	.....	165.02	165.02	.....
C-2754-C4.....	.....	6,932.98	7,992.23	4,343.62	12,335.85	428.13

C-2754 C1	5,731.00	5,731.00	5,731.00	5,731.00	5,731.00
C-2770 C2	(-8,605.44)	32,409.44	3,666.52	3,666.52	29,002.92
C-2770 C3		17,590.00	370.80	2,754.83	14,635.17
E-2800		8,247.00	600.00	729.78	7,517.22
A-2802		2,300.00	1,382.00	2,254.04	45.96
E-2819 A			800.00	975.00	153.28
H-2954		1,128.28		689.28	
CY-2778 C		7,999.71		34,716.99	6,140.01
CY-2778 C2		21,126.33	24,906.23	3,149.15	707.63
C-1226 C		1,949.78	2,739.15	458.85	753.92
H-1281		1,212.77		4,071.72	2,527.28
H-3094			800.00	10,582.68	1,913.32
H-4732			12,496.00	2,576.15	71.65
CY-3761		3,280.58	(-3,208.94)	7,835.49	5,324.44
CY-3761 C		4,976.00	8,183.91	2,010.45	4,531.00
C-4722			4,531.00		
GN-4812 C		19,475.62	(-12,594.94)	1,930.68	6,880.68
GN-4812 C2			35,000.00	3,360.11	20,010.11
RG-4979 C		120.99	(-18,113)	102.86	14,989.89
HT-5015 C5		2,082.76	(-1,594.76)	489.00	
HT-5015 C6		12,506.00	14,093.76	5,699.91	4,487.82
2A-5090 A C		3,672.00		3,672.00	
2A-5090 C2			6,402.00	989.66	5,412.34
HTS-5217 C		4,212.00	4,428.00	8,316.00	324.00
HTS-5358			14,501.00	3,465.65	11,035.35
HF-5401		39.54		33.76	5.78
2M-5907 C6		545.98	(-299.15)	246.83	
2M-5907 C7			30,812.00	7,720.77	861.31
RG-6172			5,350.21	472.90	2,210.67
CF-8559			500.00	459.76	40.24

DESIGNATED CURRENT FUNDS—SPONSORED RESEARCH (Continued)

For the Year Ended August 31, 1959

Funds	Balance August 31, 1958	Receipts	Disbursements			Balance August 31, 1959
			Salaries	Other Expense	Total	
SCHOOL OF MEDICINE (Continued)						
United States Vocational Rehabilitation—166-59	2,675.00	3,025.00		5,546.69	5,546.69	153.31
166-60	266.91	3,000.00				3,000.00
Vick Chemical Co.						266.91
Wadsworth		100.00		100.00	100.00	
Wallace Laboratories		498.00		301.00	301.00	197.00
Wander Foundation	531.87	13,800.00	752.21	8,679.55	9,431.76	4,900.11
Warner-Chilcott Laboratories	425.82		335.00	8.36	343.36	82.44
Warner-Lambert Pharmaceutical	642.00	7,200.00	1,448.72	5,946.80	7,395.52	446.48
Warner-Lambert Institute		1,200.00				1,200.00
Washington Heart Association—3	111.98	(-111.98)				
" 5	131.94			32.00	32.00	99.94
" 10	772.01		335.00	12.54	347.54	424.47
" 12	2,000.00					2,000.00
" 14	3,887.04					1,412.04
" 15	1,923.00	1,150.00	2,376.93	2,475.00	2,475.00	313.73
" 16		3,175.00	2,700.00	475.00	3,175.00	
" 17		5,000.00	3,401.44	1,257.01	4,658.45	341.55
" 18		4,198.65	2,400.00	926.02	3,326.02	872.63
" 19		1,485.00	16.66	585.42	602.08	882.92
Wenig Foundation	26.60	3,450.00	1,118.75	2,337.85	3,476.60	
Whitehall Pharmacal Co.	419.86	2,680.00	240.00	2,158.52	2,398.52	701.34
Wyeth Laboratories—1	78.90			1.40	1.40	77.50
" 2	310.00					310.00
	459,330.25	803,560.66	393,460.28	376,911.15	770,371.43	492,519.48

DESIGNATED CURRENT FUNDS—SPONSORED RESEARCH (Continued)

For the Year Ended August 31, 1959

Funds	Balance August 31, 1958	Receipts	Disbursements			Balance August 31, 1959
			Salaries	Other Expense	Total	
Cancer Clinic Building	4,172.78	(-3,138.57)		1,034.21	1,034.21	
American Cancer Society—IN-7		2,471.65	2,088.81	382.84	2,471.65	
IN-7A	976.52	(-363.94)	366.66	245.92	612.58	
PIR-24-J1	105.95	(-4.12)		101.83	101.83	477.91
PIR-24-J2	868.53			390.62	390.62	
D. C. Division 14	1,462.47	(-292.41)	950.39	219.67	1,170.06	
" 15		14,800.00	12,234.61	2,565.39	14,799.61	405.39
" 16	3100.00			300.00	300.00	
American Medical Association	535.26	1,099.70	1,625.00	37.47	1,662.47	1,972.59
Cancer Clinic—Special		1,445.25		665.08	665.08	780.17
Embryological Laboratory	4,000.00		2,165.48	766.80	2,932.28	1,067.72
Gynecological Cancer	14,569.34	25,000.00	13,581.08	6,836.41	20,417.49	39,151.29
Stewart-1	9,573.71	24,781.00	11,402.44	5,732.49	17,134.93	17,019.78
U. S. Atomic Energy Commission		8,634.00	2,123.38	628.51	2,751.89	5,881.61
AT-30-1-1850		(-3,088.71)	1,155.50	303.13	1,458.63	
AT-30-1-2506	5,167.34	29,120.71	9,663.81	2,676.92	12,340.73	16,779.98
United States Public Health Service—H-142-C8	15,299.06	(-6,921.40)	6,887.52	1,480.14	8,367.66	14,587.94
H-142-C9		30,000.00	14,220.46	1,191.60	15,412.06	9,200.00
CT-517-C10						6,378.14
CT-517-C11						12,628.46
H-2274-C4		9,200.00		521.86	521.86	
E-2634	18,324.90	(-15,000.61)	107.00	3,217.29	3,324.29	
CY-3777		24,789.00	5,340.08	7,020.46	12,360.54	
CY-3777-C		(-207.51)		960.01	960.01	
C-3818-A	1,167.52	8,407.32	2,100.00	3,193.91	5,293.91	3,113.41
C-4489		13,359.00				13,359.00
2A-5195	96,503.42	172,590.36	86,412.82	40,077.37	126,490.19	142,603.59

INVESTMENT INCOME

For the Year Ended August 31, 1959

For the Year Ended August 31, 1959					
Funds	Balance August 31, 1958	Net Income	Deductions		Balance August 31, 1959
			Current Operations	Added to Principal	
ENDOWMENT FUNDS (Schedule 12)					
UNRESTRICTED					
Academy		16.00	16.00		
Alumni		40.00	40.00		
American Airlines		42.00	42.00		
Blaug		13.00	13.00		
Campaign		10,100.89	10,100.89		
Cooper		898.92	898.92		
Crossman		11,905.00	11,905.00		
Davis		2,261.00	2,261.00		
Dolan		41.00	41.00		
Dorst		108.00	108.00		
Goldard		1,818.00	1,818.00		
Haggett		54.00	54.00		
Kopf		1,039.00	1,039.00		
Leach		54.00	54.00		
Pease		811.00	811.00		
Reckelster		54.00	54.00		
River Run		114.00	114.00		
Sanders		270.00	270.00		
Southern		678.00	678.00		
Subscription Gifts		81.00	81.00		
Syns		7,407.00	7,407.00		
Teller		85.00	85.00		
Trustees		5.00	5.00		
Walsh		541.00	541.00		
Weddell		54.00	54.00		
Willard Association					

INVESTMENT INCOME (Continued)

For the Year Ended August 31, 1959

Funds	Balance August 31, 1958	Net Income	Deductions		Balance August 31, 1959
			Current Operations	Added to Principal	
ENDOWMENT FUNDS (Continued) (Schedule 12)					
Designated (Continued)					
School of Medicine					
Bartich-Dunne		250.00	250.00		778.00
Borden	925.00	201.00	201.00		1,906.95
Collins	5,845.00	153.00	300.00		
Cooper		541.00	4,479.05		
Cummings		541.00	541.00		
Eppley		54.00	54.00		
Ford Foundation		81,811.00	81,811.00		
Gardner		243.00	243.00		
Lewis		2,237.00	2,237.00		
Meyer		12,242.00	12,240.20	1.80	
Ruffin		3,109.00	3,109.00		
School of Medicine		811.00	811.00		
Sharpe		396.53	396.53		
Tompkins		176.05	108.27	8.78	59.00
School of Pharmacy—Gibbs		541.00	541.00		
Plant—Graduate		825.00	825.00		
National University Library		994.00	994.00		
Schouler National University Library		82.00	82.00		
SCHEDULE 1		269,103.99			
SCHEDULE 10		264,624.94			
			4,479.05		

INVESTMENT INCOME (Continued)

For the Year Ended August 31, 1959

Funds	Balance August 31, 1958	Net Income	Deductions		Balance August 31, 1959
			Current Operations	Added to Principal	
ENDOWMENT INCOME (Continued) (Schedule 12)					
Designated (Continued)					
Scholarship—Andrews					
• Bartsch	528.60	269.51	100.00		498.11
• Transferred to Bartsch-Dunne Fund	680.00	1,084.00	680.00	498.11	680.00
• Bradley	277.00	149.00	200.00		226.00
• Carr	3,699.00	2,628.00	3,350.00		2,977.00
• Carter, H. H.	1,524.00	270.00	500.00		1,294.00
• Carter, M. M.	94.00	54.00	100.00		48.00
• Columbian Women Funds					
• Brown	64.00	65.00	64.00		65.00
• Chamberlin	123.00	124.00	123.00		124.00
• College Women's	27.00	27.00	27.00		27.00
• Founders of Columbian Women	278.00	270.00	268.00		270.00
• Hardy Foundation	83.00	83.00	83.00		83.00
• Herron	268.00	270.00	268.00		270.00
• Knapp	252.00	270.00	252.00		270.00
• McWilliam	53.00	54.00	53.00		54.00
• Wilson	53.00	54.00	53.00		54.00

• Davis	69.00	54.00	80.00	43.00
• D. C. D. A. R.	620.00	445.00	450.00	615.00
• Dancy	1,978.00	762.00	504.00	2,236.00
• Drane	207.00	209.00	200.00	216.00
• Fawn	458.00	270.00	300.00	428.00
• Farnham	252.00	54.00	100.00	206.00
• Fisher	175.00	53.00		228.00
• Green		58.00		58.00
• Hampel	60.00	27.00	40.00	47.00
• Harney	264.85	233.60	200.00	298.45
• Hazelton	423.00	270.00	350.00	343.00
• Kendall	320.00	323.00	320.00	323.00
• Morehouse	106.00	81.00	125.00	62.00
• Pearson	547.00	154.00	200.00	501.00
• Phi Delta Delta Fraternity	51.00	41.00	40.00	52.00
• Powell	32,071.00	2,704.00		34,775.00
• Shepard	813.00	541.00	750.00	604.00
• Spitzer	282.06	145.20	175.00	252.26
• Stone	491.00	108.00	200.00	399.00
• Swisher	700.00	806.00	700.00	700.00
• Walker	317.00	135.00	300.00	152.00
• Wabington	154.00	106.00	150.00	110.00
• Woodhull	92.00	32.00	40.00	84.00
Scholarships Awarded				
			11,545.00	

INVESTMENT INCOME (Continued)

For the Year Ended August 31, 1959

Funds	Balance August 31, 1958	Net Income	Deductions		Balance August 31, 1959
			Current Operations	Added to Principal	
ENDOWMENT FUNDS (Continued) (Schedule 12)					
Designated (Continued)					
Prize—Burns.....	85.00	54.00	65.00		74.00
" Cowles.....	232.00	162.00	150.00		244.00
" Croissant.....	89.00	54.00	50.00		93.00
" Cutter.....	84.00	54.00	60.00		78.00
" Davis.....	150.00	38.00	60.00		128.00
" Essey.....	382.00	162.00	200.00		344.00
" Evans.....	69.00	87.00	100.00		56.00
" Fitch.....	187.00	54.00	75.00		166.00
" Glover.....	59.00	81.00	48.50		91.50
" Goddard.....	479.00	299.00	300.00		478.00
" Horvitz.....		24.00			24.00
" Hubbard.....	138.00	54.00	60.00		132.00
" Kappa Beta Pi Legal Sorority.....	7.00	15.00			22.00
" Larner.....	227.00	43.50	27.50		243.00
" Mahler.....	18.00	5.00	2.00		21.00
" Ordronaux.....	313.00	270.00	150.00		433.00
" Ruggles.....	93.00	27.00	35.00		85.00
" Staughton-Elton.....	148.00	27.00	60.00		115.00
" Sterrett.....	30.00	15.75	15.75		30.00
" Swisher.....	999.00	54.00			453.00
" Walsh.....	369.00	54.00			423.00
" Weddell.....	587.00	270.00	350.00		507.00
Purses Awarded.....				1,808.75	

Library Books - Gladstone	63.00	9.00	2,462.07	72.00
Green		821.00		821.00
Henney-Troutman	62.00	24.00		86.00
Howard	4,043.65	540.04	180.69	4,403.00
Meyer	524.00	54.00		578.00
Noyes	3,928.00	541.00		4,469.00
Swisher	1,441.00	114.74	3.74	1,552.00
Exhibit G			184.43	
DESIGNATED CURRENT FUNDS (Schedule 10B)				
Commonwealth		13,677.72		13,677.72
Freed Foundation	3.34	40.00		43.34
PLANT FUNDS (Schedule 13)				
Bond		16.00		16.00
Field House		15.69		15.69
Ford Foundation Hospital Building		7,916.28		7,916.28
Law Center		4,559.91		4,559.91
Palto (income used for athletics)		1,333.54	1,333.54	
Physical Medicine Hospital Equipment		81.00		81.00
School of Medicine Building		81.00		81.00
Waller Hospital Equipment		243.00		243.00
Women's Activities Building		53.00		53.00
SCHEDULE 1			1,333.54	
TOTALS DESIGNATED INCOME--EXHIBIT D	102,953.50	324,269.04	293,214.71	31,272.56
TOTALS INVESTMENT INCOME	102,953.50	366,917.85	335,863.52	31,272.56

DESIGNATED CURRENT FUNDS—MISCELLANEOUS

For the Year Ended August 31, 1959

Funds	Balance August 31, 1958	Additions		Deductions	Balance August 31, 1959
		Gifts	Other		
SCHOLARSHIP, FELLOWSHIP					
Alexandria Women's Club.....	14.40	200.00		Scholarships..... 14.40	200.00
Allen.....		500.00		"	519.50
Alpha Zeta Omega Pharmaceutical Fraternity.....	519.50	500.00		"	500.00
American Foreign Service Association.....		400.00		"	400.00
American Foundation Pharmaceutical Education.....		100.00		"	100.00
American Society of Women Accountants.....	100.00			"	
Association of Federal Communications Consulting Engineers.....		520.00		"	520.00
Babineer.....	120.00				120.00
Banta Co. Foundation.....		750.00			750.00
Chicago Congregational Association.....	73.00				73.00
Cubanban Women.....		759.00			759.00
Crown Photo Service.....	500.00				500.00
D. C. Pharmaceutical Association.....	541.33	500.00			541.33
Drips.....		250.00			250.00
Dunbar P. T. A.....		400.00			400.00
Firestone Tire and Rubber Co.....	33.89	1,256.11			378.31
First Congregational Church Refugee Committee.....		150.00			1,282.31
General Motors Corp.....		6,850.00			150.00
Greensboro Business and Professional Women.....	100.00	100.00			6,850.00
Grant Food Shopping Center.....		670.00			100.00
Hazleton Laboratories.....		500.00			554.98
Jaffe.....		1,000.00			500.00
					1,000.00

Kappa Alpha Theta Society	1,000.00	500.00
Kappa Psi Fraternity	150.00	150.00
Kentworth Union Church	150.00	150.00
Ki-Waves of Washington	1,055.93	1,055.93
Lafayette Lancers	1,200.00	600.00
Landon County School Board	175.00	175.00
Lutheran Church of Reformation	300.00	300.00
Meyer Foundation	3,500.00	3,500.00
Michigan	157.00	4.50
National Science Foundation Graduate	2,235.00	...
National Science Foundation Graduate Teaching Assistants	978.00	978.00
Order of Eastern Star of Virginia	300.00	275.39
Parkettine Association	400.00	400.00
Pi Delta Gamma Sorority	100.00	100.00
President's	2,000.00	600.00
Robert's Memorial	400.00	400.00
School of Medicine "A"	1,000.00	1,000.00
Scottish Rite—Florida	1,800.00	1,800.00
Louisiana	20.00	20.00
Maryland	1,800.00	1,800.00
Massachusetts	1,800.00	1,800.00
Oregon	3,600.00	1,575.00
Texas	300.00	300.00
Stead Ranches	50.00	50.00
Tau Kappa Epsilon Fraternity	2,342.65	842.65
Texas Co.	500.00	500.00
Tobacco Industry Research Committee	400.00	399.90
Tressler Lutheran Home for Children	200.00	200.00
Washington Ballet Guild	2,460.00	2,460.00
Welcott Foundation	600.00	300.00
Women's Advertising Club	400.00	400.00
Women's Club of Lynn Village	200.00	200.00
Women's National Farm and Garden Association	1,500.00	1,500.00
Woodrow Wilson Foundation	300.00	300.00
Zonta Club	...	...

DESIGNATED CURRENT FUNDS--MISCELLANEOUS (Continued)

For the Year Ended August 31, 1959

FUNDS	Balance August 31, 1958	Additions		Deductions	Balance August 31, 1959
		Gifts	Other		
Prize--Alpha Zeta Omega Pharmaceutical Auxiliary	65.00			Prize.....	18.00
• Cannon, Martin L.....	3.10	25.00		•	18.00
• Chi Omega Sorority.....		25.00		•	25.00
• Delta Zeta Sorority.....		10.00		•	10.00
• Freed Foundation.....	1,000.00			•	
• Investment Income.....			43.34	•	40.00
• Howard.....		100.00		•	100.00
• Kappa Kappa Gamma Sorority		10.00		•	10.00
• Lawson.....		100.00		•	100.00
• Nevaer.....		100.00		•	100.00
• Phi Chi Sorority.....		50.00		•	50.00
• Sigma Kappa Sorority.....		10.00		•	10.00
• Student Art Show.....		90.00		•	90.00
• Zeta Tau Alpha Sorority		25.00		•	25.00
COLUMBIAN COLLEGE					
Language Workshop.....		100.00		To Schedule 1.....	100.00
• Merbank Foundation--Religion	2,500.00	10,000.00		To Schedule 1.....	10,000.00
National Science Foundation NSF-7693--Botany		3,400.00		To Schedule 1.....	78.68
• NSF-5313--Chemistry	3,630.00			To Schedule 1.....	3,630.00
Texas Co.--Romance Languages.....		50.00		To Schedule 1.....	50.00
Woodrow Wilson National Fellowship Foundation.....		500.00		To Schedule 1.....	500.00
HOSPITAL					
Arthritis and Rheumatism Foundation.....	2,045.00			To Schedule 1.....	4,090.00
House Staff.....	5,781.48	2,045.00		To Schedule 1.....	1,800.00
Multiple Sclerosis Association--Physical Medicine	3,500.00	3,850.00		To Schedule 1.....	7,350.00
Multiple Sclerosis Society--Patient Hospitalization	1,500.00			To Schedule 1.....	1,500.00
Physiotherapy.....	2,500.00			To Schedule 1.....	2,500.00
National Foundation Pulmo Center.....	32,085.48	73,644.00		To Schedule 1.....	74,417.30
Advent 1957-1958 transfer.....				To Schedule 1.....	(-7,093.09)
					38,405.27

Good Law Institute.....	1,000.00	To Schedule 1.....	1,000.00	8,393.63
Patent, Trademark and Copyright Foundation.....	73,849.23	To Schedule 1.....	73,849.23	
Shaw Foundation.....	7,511.55	To Schedule 1.....	7,511.55	
Washington Foreign Law Society Publications.....	167.60	To Schedule 1.....	296.85	
LIBRARY—Music Room.....	384.40			384.40
SCHOOL OF ENGINEERING—Texas Co.—Electrical.....				
SCHOOL OF GOVERNMENT—Robert L. Watson.....				
SCHOOL OF MEDICINE.....				
American Medical Education Foundation.....		To Schedule 1.....	50.00	
Commonwealth.....		To Schedule 1.....	10.00	
Investment Income.....	389,568.93	To Schedule 1.....	6,432.50	
Decker Corp.....	5,000.00	To Schedule 1.....	83,549.51	
Dermatology.....	6,364.72	To Schedule 1.....	6,000.00	319,697.14
Flint—Physiology.....	23,040.75	To Schedule 1.....	189.00	5,000.00
Gain on Sale of Investment.....		To Schedule 1.....	12,000.00	6,850.46
National Fund for Medical Education.....		To Schedule 1.....	37,920.00	11,063.60
Obstetrics and Gynecology—Flint.....	793.83	To Schedule 1.....		793.83
Post-Graduate Medical Education.....	28,409.92	To Schedule 1.....	982.98	28,409.92
Surgery, Education, Research.....	3,792.98	To Schedule 1.....	914.00	3,375.00
Wyeth Laboratories.....	5,000.00	To Schedule 1.....	417.48	4,066.00
SCHOOL OF PHARMACY—D. C. Pharmaceutical Association.....	1,708.38	To Schedule 1.....	134.90	1,290.90
Special Gifts.....	53.30	To Schedule 1.....		18.40
MISCELLANEOUS.....				
General Alumni Association.....		To Schedule 1.....	12,227.08	
Unrestricted.....	31,615.24	To Schedule 1.....	14,108.00	
Restricted.....		To Schedule 1.....	25.00	
Hospital.....		To Schedule 10C.....	200.00	
Agency Funds.....		To Schedule 11.....	1,368.16	
Loan Funds.....		To Schedule 12.....	175.00	
Endowment Funds.....		To Schedule 13.....	3,512.00	
Plant Funds.....		Refunds.....	137.50	396.00
Key Deposits.....	533.50	Expense.....	171.25	282.74
Speech Clinic Foundation.....	203.99			
TOTALS—EXHIBIT D.....	577,538.84		400,170.25	465,472.97

DESIGNATED CURRENT FUNDS—AGENCY

For the Year Ended August 31, 1959

Funds	Balance August 31, 1958	Deposits	Withdrawals	Balance August 31, 1959
Alumni Reception Room.....		501.00	47.00	454.00
Davis-Hodgkins House.....	14.14		14.14	
Flowers.....	66.85		15.00	51.85
Ford Foundation Municipal Manpower Commission.....		250,000.00	25,967.72	224,032.28
Pridgen, Stella J.....		600.00	200.00	400.00
Women's Board of the Hospital				
Women's Board Courier.....	179.59	6,589.01	5,840.49	928.11
Women's Board Gift Shop.....	3,297.89	43,554.08	48,112.43	(-1,260.46)
Women's Board Memorial.....	200.00		200.00	
TOTALS—EXHIBIT D.....	3,758.47	301,244.09	80,396.78	224,605.78

CHANGES IN PRINCIPAL OF LOAN FUNDS

For the Year Ended August 31, 1959

Funds	Balance August 31, 1958	Additions				Balance August 31, 1959
		Gifts	Interest on Loans	University Surplus	U. S. Government	
Himes	17,258.02		48.51			17,306.53
Home Economics	382.35					382.35
Kellogg	20,440.61		391.82			20,832.43
Law Association	1,944.98	548.16	34.50			2,527.64
National Defense				4,467.00	40,199.00	44,666.00
Pfizer	1,046.61					1,046.61
Schoenfeld	2,004.00	50.00	22.59			2,076.59
School of Medicine	12,667.62	2,930.88	25.41			15,623.91
Sutherland	1,608.31		26.51			1,634.82
University	9,203.84		215.59			9,419.43
TOTALS EXHIBIT E	66,576.34	3,529.04	764.93	4,467.00	40,199.00	115,536.31

SCHEDULE 11

CHANGES IN PRINCIPAL OF ENDOWMENT FUNDS

For the Year Ended August 31, 1959

Funds	Balance August 31, 1958	Additions			Deductions	Balance August 31, 1959
		Gifts	Investment Income	Other		
UNRESTRICTED						
Acter.....	300.00					300.00
Alumai.....	732.00					732.00
American Airlines.....	1,000.00					1,000.00
Blagg.....	250.00					250.00
Campaign.....	186,750.00					186,750.00
Cowpr.....	22,461.97			1,909.03		24,371.00
Net gain on sale of assets.....						220,160.00
Cordran.....	41,890.00					41,890.00
Davin.....	1,000.00					1,000.00
Dulac.....	2,000.00					2,000.00
Durst.....	33,610.00					33,610.00
Goddard.....	1,000.00					1,000.00
Haggett.....	19,220.00					19,220.00
King.....	1,000.00					1,000.00
Pooler.....	15,000.00					15,000.00
Reichelderfer.....	1,000.00					1,000.00
River Runn.....	2,110.00					2,110.00
Sanders.....	5,000.00					5,000.00
Southern.....	12,530.00					12,530.00
Subscription Gifts.....	1,500.00					1,500.00
Syma.....	136,980.00					136,980.00
Teller.....	1,570.00					1,570.00
Trustees.....	100.00					100.00
Walsh.....	10,000.00					10,000.00
Weddell.....	1,000.00					1,000.00
Wichard Association.....	26,900.00					26,900.00
Wichard.....	50,000.00					50,000.00
Wichard (Total)						

RESTRICTED

FELLOWSHIP

King	75,330.00				75,330.00
Miller	55,310.00				55,310.00
Sanders	209,947.24				
Net gain on sale of assets			13,229.76		223,177.00

PROFESSORSHIP

Alumni	830.00				830.00
Carrall	500.00				500.00
Congressional	158,710.00				158,710.00
Depew	170,600.00				170,600.00
Elton	14,510.00				14,510.00
Ford Foundation	776,000.00				776,000.00
Fry	44,188.00		1,237.63		45,625.63
Fry (controlled by National Savings and Trust Co.)	115,264.93				
Net loss on sale of investments				9,414.93	
Tompkins	5,103.00	2,500.00	260.00		105,850.00
Yulee	5,000.00				7,863.00
					5,000.00

LIBRARY

Gladstone	175.00				175.00
Green	20,000.00				20,000.00
Henacy Troutman	500.00				500.00
Howard	10,000.00				10,000.00
Meyer	1,000.00				1,000.00
Noyes	10,000.00				10,000.00
Swisher	2,130.00				2,130.00

CHANGES IN PRINCIPAL OF ENDOWMENT FUNDS (Continued)

For the Year Ended August 31, 1959

Funds	Balance August 31, 1958	Additions			Deductions	Balance August 31, 1959
		Gifts	Investment Income	Other		
RESTRICTED (Continued)						
COLUMBIAN COLLEGE—Burton.....	12,540.00	3,115.94	4.06			15,660.00
LAW SCHOOL—Altizer.....	1,000.00					1,000.00
• Cummings.....	96,450.00	1,024.34	1.66			97,476.00
• DeKnight.....		130,686.31	3.69			130,690.00
SCHOOL OF ENGINEERING—Howard.....	3,620.00					3,620.00
• School of Engineering.....	800.00					800.00
SCHOOL OF GOVERNMENT—Rankin.....	279,710.00					279,710.00
• Scottish Rite.....	1,000,000.00					1,000,000.00
SCHOOL OF MEDICINE						
Bartsch-Dunne.....	4,942.00		404.00			5,346.00
Income of Bartsch Scholarship Fund.....	3,710.00					3,710.00
Borden.....	2,830.00					2,830.00
Collins.....	10,000.00					10,000.00
Cooper.....	10,000.00					10,000.00
Cummings.....	1,000.00					1,000.00
Eppley.....	2,000,000.00					2,000,000.00
Ford Foundation.....	4,490.00					4,490.00
Gardner.....	44,380.00					44,380.00
Lewis.....	302,406.00	3,962.20	1.80			306,370.00
Meyer.....	57,490.00					57,490.00
Raffin.....	15,036.00	1,917.00				16,953.00
School of Medicine.....	8,216.79					8,216.79
Shares.....	3,596.22	1,135.00				4,740.00
Tongue.....			8.78			

SCHOOL OF PHARMACY—Gibbs.....					10,000.00
HOSPITAL					
Cancer Clinic.....	567.00	12.00			599.00
Chapman.....	1,230.00				1,230.00
Cleghane.....	1,000.00	25.00			1,025.00
General.....	1,470.00	510.00			1,980.00
Hirsh.....	37,640.00				37,640.00
Houser.....	2,500.00				2,500.00
Kaufman.....	1,000.00				1,000.00
Kimmel.....	3,080.00				3,080.00
Kulibank.....	1,824.00	96.00			1,920.00
Maloney.....	5,000.00				5,000.00
National Park Seminary.....	500.00				500.00
Patient Aid.....	106,170.00				106,170.00
Reinhardt.....	500.00				500.00
Strong.....	15,000.00				15,000.00
Tree.....	10,000.00				10,000.00
Woodbury.....	10,000.00				10,000.00
HOSPITAL EQUIPMENT					
Marvin, Dorothy Betta.....	50,005.00	8,173.58	2,462.00		60,640.58

CHANGES IN PRINCIPAL OF ENDOWMENT FUNDS (Continued)

For the Year Ended August 31, 1959

For the Year Ended August 31, 1959						
Funds	Balance August 31, 1958	Additions			Deductions	Balance August 31, 1959
		Gifts	Investment Income	Other		
RESTRICTED (Continued)						
SCHOLARSHIP						
Andrews	5,194.95					5,194.95
Bartich	20,040.00					20,040.00
Bradley	2,760.00					2,760.00
Carr	48,610.00					48,610.00
Carter, H. H.	5,000.00					5,000.00
Carter, M. M.	1,000.00					1,000.00
Columbian Women Funds						
Briggs	1,200.00	500.00				500.00
Brown	2,300.00					1,200.00
Chamberlin	500.00					2,300.00
College Women's	5,000.00					500.00
Founders of Columbian Women	2,000.00					5,000.00
Hardy Foundation	5,000.00					2,000.00
Herron	5,000.00					5,000.00
Knapp	1,000.00					5,000.00
McWilliam	1,000.00					1,000.00
Wilson	1,000.00					1,000.00

CHANGES IN PRINCIPAL OF ENDOWMENT FUNDS (Continued)

For the Year Ended August 31, 1959

For the Year Ended August 31, 1959						
Funds	Balance August 31, 1958	Additions			Deductions	Balance August 31, 1959
		Gifts	Investment Income	Other		
RESTRICTED (Continued)						
Paiz	1,000.00					1,000.00
Burns	3,000.00					3,000.00
Cowles	1,000.00					1,000.00
Crossant	1,000.00					1,000.00
Custer	700.00					700.00
Davis	3,000.00					3,000.00
Easty	1,000.00	100.00				1,700.00
Evans	1,000.00					1,000.00
Fitch	2,000.00					2,000.00
Glover	5,520.00					5,520.00
Goddard		2,500.00				2,500.00
Horwitz	1,000.00					1,000.00
Hubbard	350.00					350.00
Kappa Beta Pi Legal Society	800.00					800.00
Larner	100.00					100.00
Mahler	5,000.00					5,000.00
Ordonaux	500.00					500.00
Ruggles	500.00					500.00
Staughton Flton	300.00					300.00
Sterrett	1,000.00					1,000.00
Swisher	1,000.00					1,000.00
Walsh	5,000.00					5,000.00
Weddell						

<i>PLANT</i>									
Graduate.....	15,346.00	150.00							15,496.00
National University Library.....	18,390.00								18,390.00
Schouler National University Library.....	1,520.00								1,520.00
	6,913,217.93	159,648.37	4,585.62	15,138.79	9,414.93				7,083,175.78
 RESERVES FOR PROTECTION OF INVESTMENTS									
Consolidated Endowment Funds.....	102,443.70								
Net loss on sale of investments.....					2,773.59				99,670.11
Scottish Rite Fund.....	62,736.30								
Net loss on sale of investments.....					5,085.94				57,650.36
TOTALS—EXHIBIT F.....	7,078,197.93	159,648.37	4,585.62	15,138.79	17,274.46				7,240,496.25

CHANGES IN PRINCIPAL OF PLANT FUNDS

For the Year Ended August 31, 1959

Funds	Balance August 31, 1958	Additions			Deductions		Balance August 31, 1959
		Gifts	Investment Income	Other	Plant	Other	
Cancer Clinic Building— U. S. Public Health Service.....		45,000.00			45,000.00		
Cancer Clinic Equipment	437.31						437.31
Beta Gamma Phi Sorority.....	2,872.70	36.75			1,909.45	1,000.00	406.79
Special.....							
Transferred to Schedule 10.....	406.79						2,417.69
Zito.....		555.00	15.69				
Field House.....	1,847.00						
Hospital Building	239,718.36		7,916.28		1,010.64		247,634.64
Ford Foundation.....		1,010.64					
General.....							
Hospital Equipment		1,574.44			1,204.08		370.36
Cardiovascular.....		5,456.00			5,456.00		44.08
General.....	44.00						1,202.80
Multiple Sclerosis.....	1,202.80						10,891.24
Obstetrics and Gynecology O. P. Clinic.....	184.02	16,298.24	81.00		5,672.02		102.91
Physical Medicine.....	102.91						30,251.05
Prenatal Nursery.....	30,008.05		243.00				100.00
Wolfe Ophthalmology.....		200.00					
Women's Board Gift Shop.....							

LAW CENTER.....	145,826.85	4,895.84	4,559.91	587.40	154,695.20
Transferred to Schedule I.....					
Library Books					
Brooklyn Alumni Club	430.50				430.50
Council of Religious Organizations	245.44				245.44
George, Carlotta		16.00			
Hellenic Society	225.00				225.00
Merrill Lynch, Pierce, Fenner and Beane	1,164.75			36.88	1,127.87
Noyes	1,234.60			971.49	263.11
Phi Alpha Delta Fraternity	10.00			10.00	
Rosen	127.47				127.47
Marion M. Bond and Mary A. Wood Memorial	2,010.00		16.00		2,026.00
Pairo	73,798.08			34,000.00	40,623.73
Gain on sale of investments			825.65		
School of Medicine Building	5,284.00	8,160.00	81.00		13,525.00
Women's Activities Building	6,469.45		53.00		6,522.45
TOTALS—EXHIBIT G	513,650.08	83,202.91	12,965.88	1,587.40	513,770.56

GIFTS AND GRANTS

For the Year Ended August 31, 1959

CURRENT FUNDS

UNRESTRICTED—SCHEDULE 1

American Cyanamid Co.	300.00
Anderson, Locke, Trust	4,000.00
Bethlehem Steel Corp.	8,000.00
Dowdell, Susan Whitney—bequest	28.08
Eastman Kodak Co.	4,000.00
Equitable Life Assurance Society	1,000.00
Fox Foundation Foundation	3,500.00
First National City Bank of New York	315.00
General Alumni Association	12,227.08
General Motors Corp.	3,304.00
Goody Oil Co.	208.00
Hastings Finance Co.	350.00
Independent College Funds of America	646.75
Johns Hopkins Corp.	1,000.00
Late Underwriters Training Council	100.00
Maxco, G. B. Corp.	250.00
Mart, R. Co.	1,000.00
National Radio Institute	500.00
Radio Corporation of America	500.00
Texas Co.	2,057.35
Time, Inc.	486.00
United States Steel Foundation	2,000.00
	45,772.26

DESIGNATED—HOSPITAL—SCHEDULE 1

Cancer Clinic	1,607.64
Hospital	4,000.18

DESIGNATED—SPONSORED RESEARCH—SCHEDULE 10

	5,607.82
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	4,430,340.44
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Designated—Schedule 10B	
Scholarship, Fellowship—various donors	48,901.69
Pipe—various donors	545.00
Columbian College—Language Workshop—Margaret L. House	100.00
Reagan—Michael Foundation	10,000.00
Betany—National Science Foundation	3,400.00
Romance Languages—Texas Co.	50.00
Fellowship—Woodrow Wilson National Fellowship Foundation	500.00
Hospital—Arthritis and Rheumatism Foundation	2,045.00
Physical Medicine—Multiple Sclerosis Association	3,850.00
Polio Center—National Foundation	73,644.00
Law School—Ford Law Institute	1,000.00
Patent, Trademark and Copyright Foundation	46,667.05
Washington Foreign Law Society Publications	129.25
School of Engineering—Electrical—Texas Co.	50.00
School of Government—Robert L. Watson	10.00
School of Medicine—American Medical Education Foundation	6,432.50
Deener Corp.	6,000.00
Dermatology—Dr. H. Ford Anderson	585.74
National Fund for Medical Education	37,920.00
Surgery, Education, Research—various donors	565.00
School of Pharmacy—Prince Georges County Pharmacy Association	100.00
Speech Department—National Speech Clinic Foundation	250.00
General Alumni Association—various donors	31,615.24
transferred to specified funds	274,868.47
	31,615.24
	242,745.23
	4,678,693.49

GIFTS AND GRANTS (Continued)
For the Year Ended August 31, 1959

LOAN FUNDS (Schedule 11)

Law Association Fund—General Alumni Association	548.16
Schoenfeld Fund—Rose Schoenfeld	50.00
School of Medicine Fund—School of Medicine 1959 Follies	1,042.76
Joseph H. King	1,000.00
General Alumni Association	820.00
various donors	68.12
	<u>2,930.83</u>
	3,529.04

ENDOWMENT FUNDS (Schedule 12)

Professorship—Tompkins Fund—Chas. H. Tompkins Co.	2,500.00
Columbian College—Burton Fund—Grace C. Burton	3,115.94
Law School—Cummings Fund—Bequest of Homer S. Cummings	1,024.34
DeKnight Fund—Bequest of Clarence W. DeKnight	130,686.31
School of Medicine—Meyer Fund—Chas. H. Tompkins Co.	3,962.20
various donors	1,917.00
School of Medicine Fund—various donors	500.00
Tompkins Fund—Mrs. Andrew Parker	3,462.20
Emma T. Matheson	50.00
Allan D. Henry	1,135.00
Hospital—Cancer Clinic Fund—various donors	32.00
Clephase Fund—Zeta Tau Alpha Sorority	25.00
General Fund—C. D. Kaufman	510.00
Hulda Grunewald	8,173.58
Hospital Equipment—Dorothy Betts Marvin Fund—Dorothy Betts Marvin	500.00
Hospital Women's Board	10.00
Women's Board Gift Shop	3,000.00
Scholarship—Briggs Fund—Bequest of Victoria Briggs Turner	3,173.58
Green Fund—Alpha Theta Chapter of Pi Lambda Theta Sorority	2,000.00
Prize—Evans Fund—General Alumni Association	3,317.00
Horwitz Fund—Dr. Alec Horwitz	100.00
Plant—Graduate Fund—various donors	2,500.00
	<u>159,648.37</u>

DESCRIPTION OF LOAN FUNDS

August 31, 1959

HIMES LOAN FUND—Created in 1957 by Joseph H. Himes to be loaned to students of the School of Medicine	17,306.53
HOME ECONOMICS LOAN FUND—Created in 1940 by the D. C. Home Economics Association to be loaned to senior girls majoring in home economics	382.35
KELLOGG LOAN FUND—Created in 1942 by the W. K. Kellogg Foundation to be loaned to students of the School of Medicine	20,852.43
LAW ASSOCIATION LOAN FUND—Created in 1941 by the George Washington Law Association to be loaned to students of the Law School	2,527.64
NATIONAL DEFENSE LOAN FUND—Created in 1959 by the United States Government and The George Washington University, to be loaned to full-time students	44,666.00
Pfizer LOAN FUND—Created in 1953 by Chas. Pfizer and Co., Inc., to be loaned to students of the School of Medicine	1,046.61
Schoenfeld LOAN FUND—Created in 1953 by various donors as a memorial to Benjamin Schoenfeld, to be loaned to students in the School of Pharmacy	2,076.59
SCHOOL OF MEDICINE LOAN FUND—Created in 1952 by School of Medicine students to be loaned to students of the School of Medicine	15,623.91
SUTHERLAND LOAN FUND—Created in 1941 by Rose L. Sutherland and other donors, to be loaned to students of the School of Medicine	1,634.82
UNIVERSITY LOAN FUND—Created in 1928 by the University to make short time loans for educational purposes	9,419.43

DESCRIPTION OF ENDOWMENT FUNDS

August 31, 1959

UNRESTRICTED FUNDS

ACKER FUND—Bequest of George N. Acker, M.D., received in 1924, the income to be used as required	300.00
ALUMNI ENDOWMENT FUND—Created by the Class of 1920, to be added to by succeeding graduates, the income to be used as required	732.00
AMERICAN AIRLINES FUND—Created in 1957 by American Airlines, Inc., the income to be used as required	1,000.00
Bragg Fund—Created in 1955 by James Elton Bragg, the income to be used as required	250.00
Campaign Fund—Created in 1923 by various donors, the income to be used as required	186,750.00
COOPE FUND—Bequest of Jessie Coope, A.B. in Education 1930, received in 1956, in memory of her brother, Lieutenant Colonel Harry Coope, the income to be used as required	24,371.00
CORCORAN FUND—Gifts of William W. Corcoran and other donors between the years 1871-86, the income to be used as required	220,160.00
DAVIS FUND—Bequest of Harry C. Davis, received in 1946, the income to be used as required	41,890.00
DULAC FUND—Bequest of Victor Dulac, received in 1955, the income to be used as required	1,000.00
DURST FUND—Created in 1953 by Dr. Sidney C. Durst in memory of his wife, Clara Saunders Durst, the income to be used as required	2,000.00
GODDARD ENDOWMENT FUND—Bequest of Frederick J. Goddard, received in 1949, the income to be used as required	33,610.00
HAGGETT FUND—Created in 1941 by Isabelle Barnes Haggett, the income to be used as required	1,000.00
KING, W. B., FUND—Created in 1941 by William B. King, the income to be used as required	19,220.00
POOLE FUND—Bequest of George Poole in 1951, the income to be used as required	1,000.00

DESCRIPTION OF ENDOWMENT FUNDS (Continued)

August 31, 1959

UNRESTRICTED FUNDS (Continued)

REICHELDERFER FUND—Created by Mary M. Reichelderfer in 1945 in memory of her husband, Luther H. Reichelderfer, the income to be used as required	15,000.00
RIVER RAISIN FOUNDATION FUND—Created in 1955 by the River Raisin Foundation, the income to be used as required	1,000.00
SANDERS ENDOWMENT FUND—Created by J. Sanders in 1945, the income to be used as required	2,110.00
SOTHERN FUND—Bequest of Julia Marlowe Sothern, received in 1951, the income to be used as required	5,000.00
SUBSCRIPTION GIFTS FUND—Created by various donors during the years 1845-51, the income to be used as required	12,530.00
SYMS FUND—Bequest of Samuel Symis in 1891, the income to be used as required	1,500.00
TELLER FUND—Created in 1949 by bequest of John D. Teller and added to by Mary L. Teller, the income to be used as required	136,980.00
TRUSTEES FUND—Created by the Board of Trustees of the University in 1952, the income to be used as required	1,570.00
WALSH FUND—Created in 1954 by John E. Walsh, the income to be used as required	100.00
WEDDELL FUND—Created in 1948 by bequests of Alexander W. Weddell and Virginia Chase Weddell, the income to be used as required	10,000.00
WILLARD ASSOCIATION FUND—Gift of the Willard Association in 1950, the income to be used as required	1,000.00
WITHERS FUND—Gifts of John Withers and other donors during the years 1851-70, the income to be used as required	26,900.00
WOODHULL FUND—Bequest of Margaret Willett Woodhull, received in 1946, the income to be used as required	50,000.00

FELLOWSHIP FUNDS

KING FELLOWSHIP FUND—Created in 1928 by bequest of Isabella Osborn King, the income to be used for a fellowship in biology	75,330.00
MILLER FELLOWSHIP FUND—Bequest of Robin Miller, received in 1954, the income to be used for fellowships in medicine for study of cardiovascular disease	55,310.00
SANDERS FELLOWSHIP FUND—Bequest of Addie Sanders in 1928 in memory of her brother, Thomas Bradford Sanders, the income to be used for fellowships in various academic fields of study	223,177.00

PROFESSORSHIP FUNDS

ALUMNI PROFESSORSHIP FUND—Gifts of various alumni since 1911, the income to be used for an alumni professorship in mathematics	830.00
CARROLL PROFESSORSHIP FUND—Created by Mary A. Sharpe in 1928 in memory of Mitchell Carroll, the income to be used for a chair in archeology	500.00
CONGRESSIONAL PROFESSORSHIP FUND—Created in 1832 by gift of the United States of America by Act of Congress, the income to be used for professorships	158,710.00
DEFEW COURSE IN PUBLIC SPEAKING FUND—Created by May Depew in 1936, the income to be used for a course to be known as the "Chauncey M. Depew Course in Public Speaking"	170,400.00
ELTON PROFESSORSHIP FUND—Bequest of Romeo Elton of Exeter, England, in 1872, the income to be used for a professorship to be called the "Elton Professorship of Mental and Moral Philosophy"	14,510.00
FORD FOUNDATION PROFESSORSHIP FUND—Created in 1956 by the Ford Foundation, the income to be used to increase faculty salaries. After ten years, the principal sum may be used for either salary support or any other academic purpose	776,000.00
FRY PROFESSORSHIP FUNDS—Bequest of Annabel Lee Fry, received in 1945, in memory of her husband, Dr. Henry D. Fry, the income to be used for a professorship in physiology	105,850.00
Created in 1945 from income of the original fund, the income of the two funds to be used for a professorship in physiology	45,625.63
TOMPKINS PROFESSORSHIP FUND—Created in 1958 by gift of Chas. H. Tompkins Co., the income to be added to principal until principal is large enough to support a professorship to be known as the Chas. H. Tompkins Professorship in Civil Engineering	7,863.00
YULEE PROFESSORSHIP FUND—Bequest of Nannie Yulee Noble in 1929 in memory of her mother, Nancy Yulee, the income to be used for lectures in home economics	5,000.00

DESCRIPTION OF ENDOWMENT FUNDS (Continued)

August 31, 1959

SCHOOL FUNDS

COLUMBIAN COLLEGE	15,660.00
BURTON FUND—Created in 1957 by gift of Grace C. Burton, the income to be used for Columbian College	
ENGINEERING	3,620.00
HOWARD LECTURE FUND—Created in 1952 by Frank A. Howard, the income to be used for lectures on engineering	800.00
SCHOOL OF ENGINEERING FUND—Created in 1954, the income to be used for the School of Engineering	
GOVERNMENT	279,710.00
RANKIN FUND—Bequest of John O. Rankin, received in 1951, the income to be used for the School of Government	
SCOTTISH RITE FUND—Created in 1928 by the Supreme Council of the Ancient and Accepted Scottish Rite of Freemasonry of the Southern Jurisdiction of the United States of America, as a permanent memorial to George Washington, The Mason, the income to be used to maintain a School of Government	1,000,000.00
LAW	1,000.00
ALTIZER FUND—Gift of Bertha E. M. Altizer in 1954, in memory of P. J. Altizer, the income to be used for the Law School	97,476.00
CUMMINGS FUND—Bequest of Homer S. Cummings in 1957, in memory of Julia M. Cummings, the income to be used for the Law School	130,690.00
DEKNIGHT FUND—Bequest of Clarence W. DeKnight, the income to be used for the Law School	
MEDICAL	5,346.00
BARTSCH-DUNNE RESEARCH FUND—Created in 1952 by Dr. Anna Bartsch-Dunne from income of the Bartsch Scholarship Fund, the income to be used for research in medicine	3,710.00
BORDEN MEDICAL FUND—Created in 1936 by Dr. Daniel L. Borden and Jennie Ella Borden, in memory of William C. Borden, the income to be used for the School of Medicine	2,830.00
COLLINS MEMORIAL RESEARCH FUND—Created in 1946 by various donors in memory of Dr. James Lloyd Collins, the income to be used for special research in surgery	

CUMMINGS FUND—Bequest of Julia M. Cummings in 1955 in memory of Cecilia Cummings, the income to be used for research and education in cardiovascular and similar diseases	10,000.00
EPPLEY MEDICAL SCHOOL FUND—Bequest of Mary V. Eppley in 1951, the income to be used for cancer research in the School of Medicine	10,000.00
FORD FOUNDATION MEDICAL SCHOOL FUND—Created in 1956 by the Ford Foundation, the income to be used for instruction in the School of Medicine. After ten years, both principal and income may be used for medical education	1,000.00
GARDNER MEDICAL SCHOOL FUND—Bequest of William D. Gardner in 1928, the income to be used for the School of Medicine	2,000,000.00
LEWIS MEDICAL SCHOOL FUND—Bequest of Samuel E. Lewis in 1925, the income to be used for the School of Medicine	4,490.00
MEYER MEDICAL SCHOOL FUND—Created in 1955 by gifts of various donors, the income to be used for the Eugene Meyer Chair of Medicine	44,340.00
RUFFIN MEDICAL SCHOOL FUND—Bequest of Dr. Sterling Ruffin in 1951, the income to be used for the School of Medicine	306,370.00
SCHOOL OF MEDICINE FUND—Created in 1940 by various donors, the income to be used for the School of Medicine	57,490.00
SHARPE MEDICAL SCHOOL FUND—Created by Mary A., Elizabeth M., and Sallie Sharpe in 1924, the income to be used for the School of Medicine	16,953.00
TOMPKINS, CHAS. H., MEDICAL SCHOOL MEMORIAL FUND—Created in 1958 by gifts of various donors, the income to be used for annual lectures in surgery	8,216.79
	4,740.00
PHARMACY	
GIBBS PHARMACY FUND—Created by M. G. Gibbs in 1927, the income to be used to aid in establishing and maintaining a commercial pharmacy course in connection with the School of Pharmacy	10,000.00

DESCRIPTION OF ENDOWMENT FUNDS (Continued)

August 31, 1959

HOSPITAL FUNDS

CANCER CLINIC FUND—Created in 1953 by Mr. and Mrs. V. A. Klein, the income to be used for the Cancer Clinic.....	599.00
CHAPMAN HOSPITAL FUND—Bequest of Mrs. Susanna A. Chapman in 1911, the income to be used for the purposes of the free wards of the hospital.....	1,230.00
CLEPHANE HOSPITAL FUND—Created in 1931 by Washington Alumnae of Zeta Tau Alpha Sorority, in memory of Beatrice A. Clephane, the income to be used for the hospital.....	1,025.00
GENERAL HOSPITAL FUND—Created in 1929 by various donors, the income to be used for the hospital.....	1,980.00
HIRSH HOSPITAL FUND—Bequest of Bella Hirsh in 1955, the income to be used for the hospital.....	37,640.00
HOUSER HOSPITAL FUND—Bequest of E. Keller Houser, received in 1944, the income to be used to endow a room in memory of his daughter, Anna Victoria Houser.....	2,500.00
KAUFFMAN HOSPITAL FUND—Gift of Samuel H. Kauffman in 1954, the income to be used for the hospital.....	1,000.00
KIMMEL HOSPITAL FUND—Bequest of Annie Kimmel, received in 1932, the income to be used for the hospital.....	3,080.00
KUHLBANK HOSPITAL FUND—Bequest of Freda Kuhlbank, received in 1930, the income to be added to the principal until the principal shall be large enough to maintain a bed in the White Ward of the hospital to be known as the "Freda Kuhlbank Bed".....	1,920.00

MALONEY HOSPITAL FUND—Created in 1952 by the Maloney Concrete Co., the income to be used for the hospital...	5,000.00
NATIONAL PARK SEMINARY HOSPITAL FUND—Gift of students of National Park Seminary of Forest Glen, Maryland, in 1906, the income to be used toward the maintenance of a bed in the hospital	500.00
PATIENT AID HOSPITAL FUND—Created in 1956 by an anonymous donor, the income to be used to provide hospitalization to needy persons suffering from diseases, especially heart disease	106,170.00
REINHARDT HOSPITAL FUND—Bequest of Luisa Wynne Reinhardt in 1922, the income to be used for the hospital	500.00
STRONG HOSPITAL FUND—Gift of estate of Hattie M. Strong in 1952 the income to be used for the hospital	15,000.00
TREE HOSPITAL FUND—Created in 1911 by bequest of Lambert M. Tree, in memory of his mother, Mrs. Laura M. Tree, the income to be used to maintain a bed in the hospital, to be known as the "Laura M. Tree Bed"	10,000.00
WOODBURY HOSPITAL FUND—Bequest of Ellen DeQ. Woodbury in 1909, the income to be used for the treatment of female patients in the hospital	10,000.00

HOSPITAL EQUIPMENT FUNDS

MARVIN, DOROTHY BETTS, HOSPITAL EQUIPMENT FUND—Created in 1954 by the Women's Board of the Hospital, the income to be used for the purchase of equipment	60,640.58
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DESCRIPTION OF ENDOWMENT FUNDS (Continued)

August 31, 1959

PLANT FUNDS

GRADUATE ENDOWMENT FUND —Created by the Class of 1926, to be used for the acquisition of sites, erection of buildings, and maintenance and purchase of equipment. Only the income may be used until Fund reaches \$50,000 when income, and principal over \$50,000, may be used	15,496.00
NATIONAL UNIVERSITY LIBRARY FUND —Created in 1955 by transfer of the assets of National University, the income to be used toward the maintenance and extension of the Law Library	18,390.00
SCHOULER NATIONAL UNIVERSITY LIBRARY FUND —Request of James Schouler in 1921 to the National University Law School, the income to be used to purchase books for the Law Library	1,520.00

LIBRARY BOOK FUNDS

GLADSTONE LIBRARY FUND —Gift of Ethel S. Gladstone in 1951, the income to be used to purchase books for the Library	175.00
GREEN LIBRARY FUND —Gift of the William Green Memorial Fund, the income to be used to purchase books in the field of Social Sciences for the Library	20,000.00
HENRY-TRAUTMAN LIBRARY FUND —Created in 1951 by D. C. Masonic Clubs and added to in 1957 by bequest of Lynn H. Troutman, the income to be used to purchase books for the Library	500.00
HOWARD LIBRARY FUND —Gift of Colonel Deane Childs Howard in 1943 in memory of Captain Deane Childs Howard, Jr., the income to be used to purchase books for the Library	10,000.00
MEYER LIBRARY FUND —Gift of Eugene Meyer in 1944, the income to be used to purchase books for the Library	1,000.00
NOTES LIBRARY FUND —Bequest of Theodore W. Noyes, received in 1947, the income to be used to purchase books for the Library	10,000.00
SWANER ALCOVE BOOK FUND —Gift of Dr. Charles Clinton Swisher in 1941, in trust for the Historical Society of the University, the income to be used to purchase books for the Swisher Alcove in the Library	2,130.00

SCHOLARSHIP FUNDS

ANDREWS MEMORIAL SCHOLARSHIP FUND—Gift of Belle Fisk Andrews in 1920 in memory of her husband, Byron Andrews, the income to be used for scholarships "for ambitious and needy students of English, Latin, journalism, history, literature, or political science"	5,194.95
BARTSCH SCHOLARSHIP FUND—Created by Dr. Anna Bartsch-Dunne in 1946, the income to be used for a scholarship for a woman in the School of Medicine and an internship for a woman in the University Hospital	20,040.00
BRADLEY SCHOLARSHIP FUND—Bequest of Alice Bradley in 1954 in memory of Everett Lamont Bradley, the income to be used for a scholarship in the School of Medicine	2,760.00
CARR SCHOLARSHIP FUND—Created by the bequest of Emma K. Carr in 1932, the income to be used for scholarships for young white men	48,610.00
CARTER, H. H. SCHOLARSHIP FUND—Gift of Maria M. Carter in 1896 in memory of her husband, Henry Harding Carter, the income to be used for scholarships in civil engineering	5,000.00
CARTER, M. M. SCHOLARSHIP FUND—Gift of Maria M. Carter in 1871, the income to be used for scholarships for young men	1,000.00

DESCRIPTION OF ENDOWMENT FUNDS (Continued)

August 31, 1959

SCHOLARSHIP FUNDS (Continued)

COLUMBIAN WOMEN SCHOLARSHIP FUNDS

BRIGGS SCHOLARSHIP FUND—Request of Victoria Briggs Turner in 1959, to be known as the Victoria Briggs Scholarship, the income to be used for scholarships	500.00
BROWN SCHOLARSHIP FUND—Created by the College Women's Club of Washington, D. C., in 1925, in memory of Elizabeth V. Brown, the income to be used for scholarships in the School of Education	1,200.00
CHAMBERLAIN SCHOLARSHIP FUND—Created by the Columbian Women of The George Washington University in 1932 in memory of Grace Ross Chamberlain, the income to be used for scholarships for young women	2,300.00
COLLEGE WOMEN'S SCHOLARSHIP FUND—Gift of the College Women's Club of Washington, D. C., in 1926, the income to be used for scholarships	500.00
FOUNDERS OF COLUMBIAN WOMEN SCHOLARSHIP FUND—Created by the Columbian Women of The George Washington University in 1920, the income to be used for scholarships for women in Columbian College	5,000.00
HARDY FOUNDATION SCHOLARSHIP FUND—Created in 1957 by gift of Rose Lee Hardy Foundation, the income to be used for scholarships	2,000.00
HERRON SCHOLARSHIP FUND—Created by the Columbian Women of The George Washington University in 1925 in memory of Lillian Young Herron, the income to be used for scholarships for women in Columbian College	5,000.00
KNAPP SCHOLARSHIP FUND—Gift of the Columbian Women of The George Washington University in 1915 in memory of Nellie Maynard Knapp, the income to be used for scholarships for women	5,000.00
MCWILLIAM SCHOLARSHIP FUND—Bequest of Janet McWilliam, former president of Columbian Women, to the Columbian Women of The George Washington University, transferred to The University in 1954, the income to be used for scholarships	1,000.00
WILSON SCHOLARSHIP FUND—Gift of Elizabeth Wilson in 1926 in memory of her parents, Lewis D. and Myrtie H. Wilson, the income to be used for scholarships in the School of Medicine	1,000.00

<i>DAVIS SCHOLARSHIP FUND—Gift of Isaac Davis in 1869, the income to be used for scholarships for descendants of patriots of the American Revolution</i>	1,000.00
<i>D. C.—D. A. R. SCHOLARSHIP FUND—Created in 1952 by the D. C.—D. A. R., the income to be used for scholarships</i>	8,230.00
<i>DORSEY SCHOLARSHIP FUND—Created in 1947 by Harryman Dorsey in memory of Charles Worthington Dorsey, the income to be used for scholarships</i>	14,470.00
<i>DRAKE SCHOLARSHIP FUND—Bequest of Estella Constance Drane in 1957, the income to be used for a scholarship in the Department of Arts and Sciences, to be awarded to a graduate of Roosevelt High School</i>	5,000.00
<i>ERWIN SCHOLARSHIP FUND—Gift of Helen B. Erwin in 1955 in memory of Henry Parsons Erwin, the income to be used for a scholarship in the School of Engineering</i>	5,000.00
<i>FARNHAM SCHOLARSHIP FUND—Gift of Mrs. Robert Farnham in 1871, the income to be used for scholarships in Columbian College</i>	1,000.00
<i>FISHER SCHOLARSHIP FUND—Bequest of Eather Brigham Fisher in 1951, the income to be used for scholarships</i>	1,000.00
<i>GREEN SCHOLARSHIP FUND—Gift of the Alpha Theta Chapter of Pi Lambda Theta Sorority in 1959, in memory of its founder and first president, Mildred Green, the income to be used for an annual scholarship for a woman student in the field of education</i>	3,317.00
<i>HAMPLE SCHOLARSHIP FUND—Gift of Evelyn Hampel Young in 1948 in memory of her mother, Anna Spickel Hampel, the income to be used for scholarships for married women in the School of Education or Columbian College</i>	500.00
<i>HARVEY SCHOLARSHIP FUND—Bequest of Emma Elizabeth Harvey in 1923, in memory of her daughter, Elma Lewis Harvey, the income to be used for scholarships in Columbian College for young women of the Protestant faith and of the Caucasian race</i>	4,650.63
<i>HAZZITON SCHOLARSHIP FUND—Bequest of Lillie S. Hazleton in 1950, the income to be used for scholarships</i>	5,000.00
<i>KENDALL SCHOLARSHIP FUND—Gift of Amos Kendall in 1869, the income to be used for a scholarship now designated by the Board of Trustees as one of the two High School Scholarships assigned to Western High School</i>	5,960.00

DESCRIPTION OF ENDOWMENT FUNDS (Continued)

August 31, 1959

SCHOLARSHIP FUNDS (Continued)

MOREHOUSE SCHOLARSHIP FUND—Created by A. Morehouse in 1861, the income to be used for scholarships for undergraduates intending to enter the Christian ministry	1,500.00
PEARSON SCHOLARSHIP FUND—Bequest of Paul Pearson in 1944, the income to be used for scholarships in the School of Pharmacy	2,840.00
PHI DELTA DELTA FRATERNITY SCHOLARSHIP FUND—Created by Phi Delta Delta Fraternity in 1957, the income to be used for a scholarship for a woman student in the first year law class	1,000.00
POWELL SCHOLARSHIP FUND—Created by Levin M. Powell in 1886, the income to be used to train young men for entrance in the United States Naval Academy or to fit them to become mates and masters in the Merchant Marine Service of the United States	50,000.00
SHEPARD SCHOLARSHIP FUND—Bequest of Lula M. Shepard in 1946, the income to be used for scholarships in the School of Government	10,000.00
SPENCER SCHOLARSHIP FUND—Created by Louisa J. Spencer in 1918, the income to be used for scholarships	7,422.20
STONE SCHOLARSHIP FUND—An anonymous gift in 1893 in memory of Mary Lowell Stone, the income to be used for scholarships for women students of science in Columbian College	2,000.00
SWISHER SCHOLARSHIP FUND—Created by Dr. Charles Clinton Swisher in 1941, the income to be used to award scholarships in medieval history	15,395.00
WALKER SCHOLARSHIP FUND—Gift of William Walker in 1824, the income to be used for scholarships for undergraduates intending to enter the Christian ministry	2,500.00
WASHINGTON SCHOLARSHIP FUND—Gift of the New York Baptist Theological Seminary in 1830, on behalf of John Washington, the income to be used for scholarships	1,960.00
WOODHULL SCHOLARSHIP FUND—Bequest of Ellen M. E. Woodhull in 1921, the income to be used for scholarships in Columbian College	600.00

PRIZE FUNDS

BURNS MEMORIAL AWARD FUND—Gift of Persia Burns in 1937 in memory of her son, Byrne Thurtell Burns, the income to be used for an annual award in chemistry	1,000.00
COWLES PRIZE FUND—Created in 1943 by John Henry Cowles, the income to be used for annual awards in the School of Government	3,000.00
CROISSANT PRIZE FUND—Bequest of DeWitt Clinton Croissant in 1941, the income to be used to award an annual prize for excellence in dramatics or dramatic studies	1,000.00
CUTTER PRIZE FUND—Gift of Marion Kendall Cutter in 1902, in memory of E. K. Cutter, the income to be used for an annual award for excellence in the study of English	1,000.00
DAVIS PRIZE FUND—Gift of Isaac Davis in 1847, the income to be used for annual awards to members of the senior class who have made the greatest progress in elocution since their connection with the University	700.00
ESSARY PRIZE FUND—Gift of Helen Essary Murphy in 1948 in memory of her late husband Jesse Frederick Essary, the income to be used for an annual award in journalism	3,000.00
EVANS MEMORIAL AWARD FUND—Created in 1937 by friends of Joshua Evans III, the income to be used to establish a prize, as a memorial to an "outstanding life," to be awarded annually "to that man in the graduating class who has demonstrated his signal ability in the social and political sciences and who has given promise of the interpretation of that ability in good citizenship among his fellows"	1,700.00
FITCH PRIZE FUND—Gift of James E. Fitch in 1883 in memory of Willie F. Fitch, the income to be used for an annual award to a senior student for the best general examination in chemistry	1,000.00
GLOVER PRIZE FUND—Created in 1957 by Charles C. Glover, Jr., in memory of his great-grandfather, Charles Glover, the income to be used for an annual award to the student in the Law School who has attained the highest average grade in the third-year, full time course	2,000.00

DESCRIPTION OF ENDOWMENT FUNDS (Continued)

August 31, 1959

PRIZE FUNDS (Continued)

GODDARD PRIZE FUND—Gifts of Mary W. Goddard, Alice Douglas Goddard, and Frederick J. Goddard, in memory of Morgan Richardson Goddard, Edward Carrington Goddard, and James Douglas Goddard; added to in 1941 by a gift of Frederick J. Goddard in memory of Alice Douglas Goddard. The income shall be used to award four cash prizes annually to the students making the highest averages in commerce, French language and literature, pharmacy, and American literature, respectively	5,520.00
HORWITZ PRIZE FUND—Gift of Dr. Alec Horwitz, the income to be used for an annual award to a senior student in the School of Medicine who has demonstrated exceptional proficiency in the field of surgery	2,500.00
HUBBARD PRIZE FUND—Gift of Gertrude M. Hubbard in 1907 in memory of her husband, Gardiner G. Hubbard, the income to be used for an annual award for excellence in American history	1,000.00
KAPPA BETA PI LEGAL SORORITY PRIZE FUND—Gift in 1938 of Eta Chapter of Kappa Beta Pi Legal Sorority, the income to be used for an annual award to the woman student who attains the highest average in her freshman year	350.00
LARNER PRIZE FUND—Bequest of John B. Larnier in 1933, the income to be used for an annual award in the Law School	800.00
MAHLER PRIZE FUND—Gift of Martin Mahler in 1953, the income to be used for the "Martin Mahler Prize in Materials Testing"	100.00
ORDRONAUX PRIZE FUND—Bequest of John Ordronaux in 1909, the income to be used for annual awards in the Law and Medical Schools	5,000.00
RUGGLES PRIZE FUND—Gift of William Ruggles in 1859, the income to be used for an annual award for excellence in mathematics	500.00

<i>STAUGHTON-ELTON PRIZE FUND</i> —Created by gift of Romeo Elton of Exeter, England, in 1860, the income to be used for annual awards for excellence in the Latin and Greek languages, one to be called the Staughton Prize in Latin, the other the Elton Prize in Greek	500.00
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<i>RESERVE FOR PROTECTION OF CONSOLIDATED ENDOWMENT FUNDS INVESTMENTS</i> —Created from gains arising from the sale of investments and a portion of the net income of Consolidated Endowment Funds Investments	99,670.11
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DESCRIPTION OF PLANT FUNDS

August 31, 1959

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	1948	
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"to be used for the following purposes," (here specify in detail the purposes).

SUMMARIES OF
DOCTORAL DISSERTATIONS

1959

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PREFATORY NOTE

This number of the University BULLETIN contains summaries of the dissertations which have been accepted during 1959, in partial satisfaction of the requirements for the degrees of Doctor of Philosophy, Doctor of Juridical Science, Doctor of Education, and Doctor of Business Administration at The George Washington University.

AVAILABILITY OF DISSERTATIONS

The dissertations in typescript form are filed in the University Library, where they may be consulted by students interested in examining the complete texts.

Information about interlibrary loans or photoprint and microfilm copies of dissertations listed in this and earlier issues may be obtained from the University Librarian.

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SUMMARIES OF DISSERTATIONS
SUBMITTED FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY

THE ROLE OF LIPIDES IN THE BIOLOGICAL ACTIVITY OF THE ROUS SARCOMA VIRUS

by JOHN BROMLEY MOLONEY •

The problems of Rous virus isolation and control of biological variations associated with the agent are considered. A review of the principles and techniques which have been employed in attempts to isolate and concentrate the Rous agent from the tumor tissue is presented.

A procedure found satisfactory for the preparation of a partially purified suspension of the Rous sarcoma virus is described. This is a physicochemical procedure involving the use of the stabilizing citrate salts, as well as the protein and nucleic acid precipitant, protamine, followed by proteolytic digestion and differential centrifugation. The resulting extract has sufficient biological activity to warrant use of the material as a standard of reference for quantitative biological studies. Biochemical and electron microscopy studies on the derived virus suspension indicate that it is in a relatively high state of purity.

A principle factor shown to affect stability of the virus is the lipid portion of the agent or the microsome fraction with which it is associated.

The oxidation of lipides derived from Rous sarcoma tissue was found to be measurable by the thiobarbituric acid (TBA) reaction of Kohn and Liversedge. With this reaction, a study was made of the *in vitro* effect on Rous sarcoma virus preparations of added lipid oxidation products. It was shown that the tumor-producing activity of the virus was inhibited by the oxidation products (peroxides) of Rous tumor lecithin, microsome lipides, and methyl linolenate. The degree of inhibition of phosphate-virus suspensions was related to the concentration of added oxidation products, as measured by the TBA reaction. On the other hand, citrate buffers protected the virus to a large extent against inactivation by relatively high concentrations of the added lipid peroxides. A significant *in vivo* effect of added lipid peroxides on the Rous virus and its manifestation, the tumor tissue, was shown by the following: increase in the latent periods, increase in the percentage of tumor regressions, and alteration of the characteristic morphology of the treated tumors. The *in vivo* results indicate that lipid peroxides are intimately related to cell and/or tumor growth.

An inverse correlation between tumor potential lipid peroxide con-

1957. T. J. University, M.S. 1954. The George Washington University, Ph.D.
January 21, 1956. Professor and consultant in charge of research, Paul William
January 1957. Walter C. Schmitt, Chemist, Cellular Biology Section,
National Cancer Institute. Research Consultant in Cytochemistry, The

tent and virus initiating dose was demonstrated. This quantitative biochemical manifestation of the neoplastic process was further considered through a study of the relationship of endogenous and added or exogenous antioxidants to virus activity and tumor growth.

The mechanism by which citrates protect the virus against inactivation by oxidized lipides and the role of phospholipide metabolism in the causation of cancer in general are discussed.

THE EFFECT OF A DISRUPTION OF THE METABOLISM
OF SEROTONIN AND NORADRENALINE ON THE
ACQUISITION OF A CONDITIONED AVOIDANCE
RESPONSE IN THE RAT BY INHIBITING MONOAMINE
OXIDASE WITH IPRONIAZID ALONE AND IN
COMBINATION WITH RESERPINE

by KENNETH FREEMAN MOSMAN •

Thirty-eight male albino rats were given fifteen conditioning trials on each of four consecutive days in a modified Miller-Mowrer apparatus. Each daily fifteen-trial set was preceded by a sixty-second adaptation period. The conditioned stimulus was the sound of a metronome. Aversive stimulation used for the unconditioned stimulus was electric shock. Animals were required to jump to a perch to avoid the unconditioned stimulus. The average intertrial interval was progressively reduced over days. Each of the animals exhibited at least three conditioned escape responses on the first day of conditioning.

Three hours prior to the second day of conditioning, eleven animals received iproniazid (100 mg/kg), and eleven received a similar dose of iproniazid followed in two hours by reserpine (5 mg/kg). The remaining animals were divided equally and given control doses of saline. All dosages were given by intraperitoneal injection. Experimental and control groups were matched, for purposes of analysis, using the conditioned response level established prior to treatment.

It was hypothesized that the two conditions of monoamine oxidase inhibition would facilitate the acquisition of a conditioned response. Response latency, and avoidance frequency during the adaptation period and during conditioning, were criteria of avoidance conditioning.

The analysis of the data of the study produced the following results and conclusions:

1. All experimental and control groups acquired statistically significant and equivalent amounts of a conditioned avoidance response on the first day of conditioning.
2. Significant weight losses were seen in both iproniazid and in iproniazid-reserpine animals after treatment. These weight losses were not related to the acquisition of an avoidance response.
3. Animals that received iproniazid tended to be slower than the control group on initial trials and faster on final trials, three and twenty-seven hours after treatment. Significant differences in response latency were seen, however, only on trials ten, thirteen, and fifteen, twenty-seven

• AB AM 1961. The George Washington University: Ph.D. conferred February 23.
Professors in charge of research: Thelma Hunt, Professor of Psychology, Chester Elwood
and Professor of Physiology.

hours after treatment. On each of these three trials the iproniazid group was faster than the control group. Fifty-one hours after iproniazid, animals avoided aversive stimulation more quickly than controls on the majority of trials. These group differences were not, however, statistically significant.

Iproniazid animals were significantly more variable as a group in latency of response on initial trials and less variable on the final trials, three and twenty-seven hours after treatment. Fifty-one hours after treatment the iproniazid group was less variable than the control group in response latency on ten of the fifteen trials. Six of these variance differences were significant.

No significant treatment effects were obtained when the response latency data were averaged by day. The differences between the proportion of iproniazid and control groups avoiding in preconditioning adaptation periods were not significant.

The response latency data are consistent with the interpretation that the effect of a single dose of iproniazid during the acquisition of a conditioned avoidance response is to disrupt and then to facilitate avoidance conditioning as conditioning trials are extended. This conclusion was supported by avoidance frequency data during the adaptation period and during conditioning only by a gross similarity of trend and not by statistical significance.

4. Iproniazid-reserpine produced a consistently faster and less variable group performance over trials in comparison with controls. Although mean differences in response latency were significant on only one of the forty-five trials following treatment, all but six of the variance differences on these trials were significant. Analyses of variance of response latency data averaged by day yielded no significant treatment effects.

The mean avoidance frequency was consistently higher for the iproniazid-reserpine group than for controls. Only on the sum of the first seven of the fifteen trials twenty-seven hours after treatment was the mean avoidance frequency difference significant. Iproniazid-reserpine produced less variability of avoidance frequency over trials as compared with controls. The variance differences in mean avoidance frequency were significant on the first half of the fifteen-trial sets, three and twenty-seven hours after treatment. Fifty-one hours after treatment significant mean avoidance frequency differences were seen on the first half and the second half of the set of fifteen trials.

Significant "treatment by level" interactions in avoidance frequency data were obtained twenty-seven and fifty-one hours after treatment, suggesting that iproniazid-reserpine treatment has its most beneficial effect on the acquisition of a conditioned avoidance response in animals who have acquired little of such a response at the time of treatment.

The differences between group variances in avoidance frequency were significant twenty-seven and fifty-one hours after treatment.

5. Behavioral trends were evident as early as three hours after treatment for both the iproniazid and the iproniazid-reserpine groups. The facilitation of the conditioned avoidance response as a result of either treatment was interpreted as more likely the result of changes in serotonin levels than changes in noradrenaline levels in brain.

6. The extent of facilitation of the conditioned avoidance response may be a positive function of the extent of the increased levels of serotonin in brain. It was hypothesized that at some critical point further increases in brain serotonin levels have little effect on the acquisition of an avoidance response.

7. The results of this study in conjunction with other research data, led to the conclusion that the central mechanism underlying the acquisition of a conditioned avoidance response involves specific structures of the limbic lobe which are rich in serotonin, e.g., septum, caudate nucleus, amygdala, hypothalamus, pyritorm cortex, and hippocampus.

8. The facilitation of the acquisition of a conditioned avoidance response may be mediated primarily by a serotonin inhibition of both inhibitory and facilitative mechanisms within the serotonin-rich limbic areas. A secondary alerting mechanism, possibly involving adrenaline, may also underlie the acquisition of a conditioned avoidance response.

9. Motor, sensory, and motivational components of an avoidance response are functional when monoamine oxidase is inhibited either by iproniazid alone or when given in combination with reserpine.

10. The altered metabolism of serotonin does not always lead to abnormal mental functioning, as has been implied in some theoretical statements on the etiology of psychoses, but, on the contrary, may lead to the enhancement of normal mental functioning.

11. The discovery of drugs specific to the various components of emotion gives promise of resolving differences in behavioral theory.

REGULATION OF INSURANCE IN THE UNITED STATES BY THE FEDERAL GOVERNMENT

by INGOLF HELGI ELFRIED OTTO*

This study of the role, actual and potential, of the federal government of the United States in the regulation of insurance has given particular attention to those aspects of the problem not adequately examined by the existing literature. Detailed delineations of insurance law, explorations at length of the economic history of insurance, and recapitulations of the social control of business have, therefore, not been attempted.

OBJECTIVES AND CRITERIA

Governmental regulation of insurance in the United States grew out of specific laws being passed to correct specific abuses. These laws and the cases in which they were interpreted led to the acceptance of certain objectives that were to be secured by the regulation:

1. Elimination of monopolies
2. Encouragement of competition
3. Prohibition of unfair competition
4. Promotion of stability

Such objectives are all very well, but not every means by which they are sought is necessarily desirable. The mechanism of regulation must also be critically examined. A large number of testing tools could be used; in the present case they are limited to the marginal conditions of maximum welfare and Occam's Razor.

The marginal conditions, in their insurance application, suggest that the customer who most wants an insurance should have it; that an insurer who can supply insurances more advantageously than another should do so; that the insurances purveyed to the public ought to be the ones wanted by the public; and that insurers should not try to supply customers with protection they can better supply themselves.

The existing system of insurance regulation does violence to more than one of the marginal conditions: to the extent that it does its desirability is lessened. The question of whether the social good produced by the regulation outweighs the social detriment caused by such violations cannot be categorically answered because a calculation of compensating taxes and bounties is not possible. In comparing alternative systems, therefore, the best that can be done is to determine whether one system appears to violate more of the conditions than another. Then.

* A.B. 1941, University of Cincinnati; A.M. in Govt. 1950, The George Washington University; Ph.D. conferred February 23, 1959. Professor in charge of research: Donald Stevenson Watson, Professor of Economics.

with due allowance for the distortions involved in applying conditions intended for pure and perfect competition to a market in which competition is imperfect, the relative desirability of the two systems can be determined.

But one further test must be applied—simplicity. It is a test of universal application, perhaps most usefully and clearly expressed in Occam's Razor, *Entia non sunt multiplicanda praeter necessitatem*. If a thought, a word, an apparatus is not necessary to the accomplishment of the goal, do away with it. In insurance regulation, it suggests that the least complex, least costly system that can achieve the objectives is the best.

THE STATE OF COMPETITION

The insurance business in the United States is characterized by monopolistic competition. Insurers vary greatly one from the other, as do their agents. Each is at all times trying to establish the uniqueness of the product he furnishes; so policyholders and insurers are joined not at random but in accordance with their preferences. The lack of homogeneity among insurers and their agents, however, means that the degree of monopoly power possessed varies remarkably. The question of whether workable competition exists in the insurance business turns on the structure of the market and the performance of the insurers.

The structural requirements are a fairly large number of sellers and buyers, no one of whom occupies a large share of the market, the absence of collusion among either group, and the possibility of market entry by new firms. Insurance buyers in the United States number some two hundred million; insurers, some six thousand; so there appears to be a large enough number. No one insurer or group of insurers writes more than 6 per cent of property and casualty insurance or has more than 17 per cent of the life insurance in force. A great deal of collusion exists, but most of it is directed toward improving the product, reducing its cost, and alleviating certain social problems that have a direct connection with insurance. Widespread and deleterious collusion does exist, however, among property and casualty insurers in the fixing of rates. Freedom of entry into the condition of insurer and that of agent is, for all practical purposes, unlimited and easy. The requirements imposed as to capital and technical knowledge in most states are nominal. So there is, each year, a number of new insurers entering the market and a roughly equivalent number of insurers leaving it.

The performance tests of unremitting pressure for product and process improvement, downward adjustment of prices concomitant with substantial reductions in costs, concentration of production in units of the most efficient size, efficient adjustment of capacity to output, and avoidance of waste in selling activities, are met, with the possible exception of the last; so both the structure of the market and the performance of insurers indicate that, in the absence of collusion, com-

petition in insurance can be workable. In addition, policyholders have open to them substantial exercises of countervailing power in being able to form their own insurance companies, exchange contracts of insurance among themselves through the medium of an attorney-in-fact, or set up their own self-insurance plans.

DEVELOPMENT OF INSURANCE REGULATION

The development of governmental regulation of insurance in the United States followed a fairly consistent pattern from the founding of the Republic until 1944. The states took specific corrective action to curb specific abuses and in time assembled a substantial body of insurance laws and regulations, together with an elaborate apparatus of control. During this period the Supreme Court consistently held that insurance was not commerce, therefore not interstate commerce, therefore not subject to federal control. At the same time there was a certain amount of serious discussion of the possibility and desirability of federal regulation; but its proponents could not overcome the obstacles of the Supreme Court's doctrine short of an amendment to the Constitution, which was not attempted. The major investigations of insurance created a certain amount of support for the proposal of federal regulation by disclosing the defects of state regulation, yet the Constitutional question frustrated any action. Then, on June 5, 1944, the Supreme Court reversed seventy-five years of consistent case law and found that insurance was, after all, commerce, hence interstate commerce, hence under federal law.

By its decision the Supreme Court impeached the legality of the whole structure of state supervision and made applicable to insurance numerous federal laws never before thought to deal with it: the Sherman Act, Clayton Act, Federal Trade Commission Act, Robinson-Patman Act, National Labor Relations Act, and the Fair Labor Standards Act. An effort was made to secure for insurance a blanket exemption from the application of the federal anti-trust laws; but that effort was defeated. Then, by Public Law 15—the McCarran Act—Congress declared that the continued regulation and taxation by the states of the business of insurance was in the public interest and that the federal anti-trust laws would not apply to insurance for a period of some two years. Thereafter they would apply to the extent that the states did not regulate the business of insurance, except that acts of boycott, coercion, and intimidation were interdicted entirely and immediately. In order to bring the state regulatory system into order, the state insurance commissioners worked with insurance representatives (the All-Industry Committee) in preparing model regulatory bills to be considered by each state and, if possible, passed before the expiration of the moratorium

Congress had granted. These imposed rate regulation on property and casualty insurance to a much greater extent than had obtained formerly and set up many standards of proper insurer conduct. In subsequent legal decisions the courts interpreted the McCarran Act to mean that nothing had changed from the old days so far as the states' power to tax and regulate was concerned.

PRESENT FEDERAL REGULATION

The federal government today takes an active part in the regulation of insurance in many ways. By operating large insurance systems of its own it perforce regulates them: National Service Life Insurance, Old-Age and Survivors Benefits, Railroad Retirement, Civil Service Retirement, Unemployment Compensation, Bank Deposit Insurance, and the like, make up an imposing body. As to the supervision of private insurers, in addition, a number of federal bureaus have evidenced increasing concern: the Department of Labor by drawing up a model Workmen's Compensation Law, the Securities and Exchange Commission by trying to extend certain provisions of the Securities and Exchange Act to stock insurance companies and by trying to bring the sale of "variable annuities" within the scope of its rules, the Interstate Commerce Commission by an increasing intervention in the affairs of companies insuring motor truck carriers, the Department of Justice by prosecuting local insurance boards for conspiring to fix commissions and to boycott nonmembers, and the Federal Trade Commission by attempting to assume jurisdiction over insurance advertising. These activities were not the coordinated movements of a proper regulatory system, they were piecemeal and essentially futile engagements of ephemeral targets that presented themselves to a particular federal bureau.

ADEQUACY OF PRESENT REGULATION

Regulation of insurance in the United States can be accomplished in four general ways: reversion to sole state control, establishment of sole federal control, maintenance of the *status quo* of intertwined state and federal control, or establishment of an improved and coherent system of state and federal control. The first two possibilities are so little likely that they can be disposed of summarily, the last two are the ones that merit detailed exploration.

The present system of insurance regulation consists of the structure of state regulation developed from the founding of the Republic to 1944, plus the layer of federal authority overlying it since that year. The states now scrutinize insurers as to finances, investments, rates, amount of new life business written, commissions paid to agents, kinds and amounts of risks that may be written, reinsurance, and—depending on

the state—many other things besides. The state insurance commissioner is called upon to make constant quasi-judicial, quasi-legislative, and executive determinations on the operational minutiae of insurers and their agents, a good many of which determinations are beyond his power to accomplish effectively.

This arrangement of fifty-four state-level controls with a layer of federal control moving to fill its interstices is faulty in accomplishing the objectives of a regulatory system: instead of eliminating monopolies it protects monopolistic practices in concerted rate-making, it discourages rather than encourages price competition, it is less than effectual in preventing unfair competition, and its record in promoting stability is marred and blotted.

Several weaknesses are discovered in the present system:

1. If insurers are examined one at a time and at discrete intervals, it is possible for unscrupulous persons to make one decent capitalization do for any number of companies, especially if their common ownership is undisclosed.
2. Lack of effective control over reinsurance allows assets to be drained from insurers unobtrusively.
3. The fact that majority stockholders of insurance companies have almost no liabilities but are in a position of practical control makes them able to influence the company's officers to commit improper acts for the stockholder's benefit.
4. The very process of insurance company examination is regressive. With the costs of examination charged to the insurer, a young insurance company is not examined as often as it should be, while a financially straitened company may be thrown into insolvency by the heavy and inopportune costs of examination.
5. State insurance commissioners can effectively regulate only admitted companies or licensed and conscientious surplus line agents; non-admitted insurers operating in interstate commerce or in foreign trade are beyond his reach.

The conclusion must be, therefore, that the present system does not achieve its objectives. The criteria applied to the mechanism are similarly violated. Obviously, the number of regulatory entities is great, whether too great depends on the possibility of a simpler mechanism that could accomplish the objectives at least as well. The marginal conditions of maximum welfare are violated: consumers are not enabled to get the insurances they want simply by paying a price; insurers who can supply cover more advantageously than others are prevented from doing so, the categorizing implicit in rate-making creates

an artificial shortage of insurances for certain kinds of risk and plethora for others, and self-insurers are not given free scope to act.

OPTIMAL FEDERAL REGULATION

An optimal federal system of insurance regulation is one that would accomplish all the stated objectives by means which met all of the criteria. It has been suggested that, using the analogy of state banks and national banks, a separate and dual system of regulation might be optimal. An insurance company would have a choice between being a state insurance company under state regulation or a national insurance company free of state regulation and answerable only to a single federal supervisory authority. The requirements for being a national insurance company could be made quite rigorous, so that the federal regulatory authority could confine itself to financial regulation of the kind familiar in banking rather than being trapped in a morass of form, rate, and business policy regulation. The national insurance company would, therefore, be free to use whatever forms and rates it wished. It would be subject to continuous and rigorous examination: at any sign of surplus going below a safe margin an examiner would begin to live with the company. In addition, such companies could have formed for them a type of safeguard similar to the Federal Deposit Insurance Corporation. Such a system would have every chance of meeting the objectives without violating any of the criteria. It would solve many of the serious problems insurance now faces without creating an ungovernable number of new problems.

CONCLUSIONS

From this study proceed certain conclusions:

1. Adequacy of the Present Federal Role in Insurance Regulation

The present structure of intermingled state and federal control, with state control subject to certain inherent vices and federal control manhandling itself intermittently and whimsically, does not accomplish the objectives of a regulatory system. Its machinery violates the marginal conditions of maximum welfare and is unnecessarily complicated.

2. The Existence of Workable Competition

By reason of the ease of entry into the status of insurer, the large number of existing insurers, the rather small share of all cover written by any one insurer, and the actual performance of insurers in the market, workable competition may be said to exist in those areas of insurance not marked by collusion: *viz.*, life, marine, accident and health, and a few other lines. Legalized collusion exists in large portions of property and casualty insurance: these branches of the business could become workably competitive in the absence of collusion.

3. The Necessity of Rate Regulation

The kind of insurance regulation existing today in the United States is based on the postulated necessity of rate regulation, especially fire rate regulation. It was chiefly in the name of rate regulation that the McCarran Act—Public Law 15—allowed insurance certain exemptions from the federal antitrust laws. The emptiness of the concept may be seen from the fact that even in the United States there are rates which are not regulated, while in the United Kingdom and certain other countries no rates are regulated.

4. An Improved Federal Role in Insurance Regulation

The federal government could improve its role in the regulation of insurance and make a signal contribution to solving some of the difficult problems facing insurance by setting up a separate and parallel system of regulation applicable only to specially chartered national insurance companies. Such companies would be free of state regulations and would be answerable only to a single federal supervisory authority, on the analogy of national banks. The federal regulatory authority could establish a single point of control: the financial integrity of the insurer. The standards could be set quite high and could be enforced rigorously. As a result there would be no need for endless regulation of minutiae: the insurer would be free to use whatever forms and rates it wished so long as it remained amply and demonstrably solvent. Such a system could accomplish simply and elegantly all of the objectives of a regulatory system without violating the criteria set up.

Put bluntly, insurance in the United States, by historical accident, wandered into a regulatory pattern which is yielding unsatisfactory results. Since the basic pattern is faulty, tinkering with the mechanism will not do. What is wanted is a fundamental reform, issuing in a simple and effective system. Such a system has been set forth here and is available for use at any time.

EFFECT OF CHLORAMBUCIL ON THE SYNTHESIS OF PROTEIN AND NUCLEIC ACIDS IN TUMOR- BEARING MICE

by SACHINDRA NATH PRADHAN *

Chlorambucil [CB 1348; Leukeran; *p*-*N,N*-di(β -chloroethyl) amino-phenyl butyric acid] is a promising antitumor alkylating agent, at present being used for the treatment of various neoplastic diseases of lymphoid tissues. To date, little is clearly known about the mechanism of action of this drug. Like nitrogen mustard (HN2) and some other alkylating agents, it may be expected to have some action on nucleic acid and protein metabolism. However, variations have been observed in the effects of different alkylating agents, and findings on the mechanism of action of HN2 have varied from laboratory to laboratory in many instances. The present study was, therefore, undertaken to investigate the effect of chlorambucil specifically on the synthesis of protein and nucleic acids.

In this study chlorambucil was found to affect an experimental tumor, L-1 (Lymphoma #1; a lymphosarcoma), in CAF₁ mice, as manifested by diminution of its volume. Because of this and other advantages, L-1 tumor was used in further work. Groups of CAF₁ mice (usually three in each), bearing L-1 tumor, were treated with one or three doses of chlorambucil. Each dose usually consisted of 10 μ g/g given daily by subcutaneous route. Whole body irradiation (600 r) was given in two experiments. One-half to one hour after X-rays or a single dose of the drug, or after the last dose in three dose-schedule, one of the following radioactive metabolites was injected intraperitoneally in 0.1 μ g/g doses: glycine-2-C¹⁴ (6 experiments), DL-lysine-1-C¹⁴ (2 experiments), formate-C¹⁴ (2 experiments), adenine-8-C¹⁴ (2 experiments), and orotic acid-6-C¹⁴ (1 experiment). Tumor volume was measured in the control and the three dose-treated groups at the beginning of treatment period and before sacrifice. Two and one-half to 8 hours after the injection of metabolites the mice were sacrificed, and tumor and liver were collected. Each tissue was individually analyzed for separation of one or more of the following four fractions, depending on the metabolite used: protein, acid soluble nucleotide, ribonucleic acid (RNA), and deoxyribonucleic acid (DNA). The specific activity of the appropriate fraction or fractions was then determined.

Following the treatment with three doses of chlorambucil, incorporation of radioactive glycine and lysine into protein and of glycine into acid-

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soluble nucleotides in tumor was inhibited in all experiments. Incorporation of labelled glycine, formate, adenine, and orotic acid into nucleic acids of tumor also was inhibited in a majority of the experiments under this schedule. No preferential effect was observed on DNA synthesis, as in the case of HN2. In many of the experiments inhibition of these synthetic processes could be correlated with diminution of tumor volume as a result of treatment.

In the groups treated with one dose of the drug or X-rays, the specific activity of different fractions from tumor showed no definite change in more than 50 per cent of instances and increased or decreased in the rest.

In these experiments, liver appeared to be unaffected by treatment with X-rays or chlorambucil. As in the case of tumor in X-ray or one dose-treated groups, no definite change in specific activity of different fractions was seen in more than 50 per cent of the mice, with a slight increase in some and decrease in others.

Inhibition of incorporation of five different metabolites into protein and nucleic acids in this chlorambucil-susceptible lymphosarcomatous tumor represents a drug-effect of generalized nature and raises the question, whether this is a cause or an effect of inhibition of some more vital and fundamental process in the cell.

THE MURINE TOXIN OF *PASTEURELLA PESTIS*

by JAMES HENRY RUST, JR.*

An efficient method for the large scale production of gram quantities of crude plague toxin has been developed. The method involves the growing of the plague organisms in large carboys with vigorous aeration, allowing the organisms to autolyze and preparing the toxin from the autolysate by precipitation with solid ammonium sulfate. The toxin yield from such cultures is equivalent to or greater than the yield by methods described previously.

By the use of the continuous-flow hanging-curtain electrophoresis apparatus developed by Karler, it has been possible to purify this murine toxin of *Pasteurella pestis* to such an extent that the final product exhibited only one band in the very sensitive gel precipitation techniques of Oudin and Ouchterlony. The final product had an intraperitoneal LD₅₀ of 0.7 µg for 16 to 18 gram mice and an intravenous LD₅₀ of 0.2 µg. These preparations remain the purest ones available in the laboratory.

Nutritional requirements for maximum toxin production by the cell have been examined with respect to amino acid composition of the medium and the iron concentration. It was shown that toxin production can be correlated with the number of amino acids in the growth medium. That is to say, as the number of amino acids in the medium was increased, the toxin content of the cells was also increased. Iron, however, had no direct effect on the amount of toxin produced by the cells. Unlike the diphtheria organism, the plague bacillus is only vegetatively inhibited by either high concentrations of iron or no iron at all. This suggests that the iron is necessary for the nutritional well being of the cell and is not correlated with its ability to produce toxin.

A method for obtaining radioactive toxin has been suggested with a subsequent survey as to the distribution of this labeled material within the organs and tissues of the mouse. It was shown that toxin was distributed throughout the liver, spleen, kidney, and lung of the host while the intestine, brain, and heart remained essentially free of toxin.

The purified toxin has been shown to have the ability to degrade ribonucleic acid *in vitro*. All attempts to separate this activity from the lethal action of the toxin failed.

An important correlation has been found to exist between the ability

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The study sought to answer the following experimental questions:

1. Under which group method would participants make the greater academic progress?
2. Which method would appear to facilitate the greater personal and social growth?
3. Under which method would students develop the more realistic educational and vocational plans?
4. Which method would students perceive as being the more helpful?

RESULTS

Academic Progress

The significance of between-group differences in initial academic standing (that is, numbers admitted in good standing or on academic probation) was explored, pair-wise, by the chi square technique. Experimental Group I was found to contain a significantly lower proportion of students admitted on academic probation than Experimental Group II or the Control Group. Inasmuch as students admitted on academic probation were those graduated in the lowest quarter of their high school class, Experimental Group I had an initial advantage, academically speaking. By the end of the first semester and again at the year's end, differences in academic standing among the groups were no longer significant, indicating that, as a whole, both Experimental Group II and the Controls had made sufficient academic progress to overcome their original disadvantage.

As an index of the extent to which subjects were making academic progress in line with their academic aptitude, Pearson's r 's were calculated between total scores on the American Council on Education Psychological Examination for college freshmen and first-semester grade-point averages. All coefficients were low and not significant. It would appear that either no relationship was demonstrated because there was a sizeable proportion of both under-achievers and over-achievers in all groups, or that this test does not measure factors related to academic performance at the Montgomery Junior College.

As a measure of the realism with which subjects viewed their academic performance, Pearson's r 's were computed between actual and estimated semester grade-point averages. Significant coefficients ranging from .75 to .85 were obtained; differences in r 's among the groups were not significant. On the whole, students in each group were able to estimate final grades with considerable realism.

Academic attrition among the groups, as indicated by official withdrawals and by drop-outs, was slight and differences were not significant. A total of ten students officially withdrew or dropped out.

Brief case studies of these students suggested that failure to complete

the first semester was generally associated with a constellation of crushing personal problems. Either sufficient help was not provided through the group procedures or these were students whose problems were so crippling as to warrant intensive psychotherapy.

PERSONAL AND SOCIAL PROGRESS

Personality changes during the semester were investigated on the Social Maturity (SM), Developmental Status (DS), Impulse Expression (IE), and Dominance and Confidence (DC) scales of the Vassar College Attitudes Inventory, which was administered to all subjects at the beginning and at the end of the semester.

Differences among the groups on each of the four scales were not significant at either the beginning or end of the semester, according to the F test. An Analysis of Covariance yielded a significant F only for changes on IE, a scale designed to measure readiness to gratify impulses in action. It can, therefore, be inferred that, on the average, differences among mean scores of the groups on this variable at the close of the study were greater than could be accounted for by initial differences among the groups. Since mean IE scores for both Experimental Group II and the Control Group increased while the mean score for Experimental Group I remained the same in both testings, it was concluded that, as a whole, students in Experimental Group II and the Control Group had changed significantly in the direction of a somewhat greater readiness to gratify impulses in action—a change which, according to Vassar studies, is characteristic of personality growth during the college years and may represent either a freeing of constrictions resulting in greater spontaneity or an increased defensiveness resulting in a kind of acting out. When the significance of within-group changes on the various scales was investigated by means of Student's *t*, differences in both IE and DS means were significant for Experimental Group II and for the Control Group; on each scale, means increased significantly for each group on the January testing. These changes on DS represent an increase in "rebellious independence"; this change is also in the direction of personality growth during the college years, according to Vassar data.

Differences in the number of problems circled on the Mooney Check List at the beginning and at the end of the semester were investigated by an Analysis of Variance, Nested Design. The between-months interaction was significant, representing a decrease, on the average, in the number of problems circled by subjects in all groups in January as compared with September. However, as indicated by the group by month interaction and the group by month by category interaction, neither of which was significant, over-all differences in the extent of change

between groups and differences in between-group changes on the various categories could not be regarded as significant. On the average, all groups could be considered as "improved" in the sense that fewer severe problems were reported at the end of the study than at the beginning. However, there was no indication that this improvement was significantly greater for any one group or that any one group improved to a significantly greater extent on any category on the Mooney.

A content analysis was made of autobiographical data in which students in all groups described changes they perceived in themselves throughout the semester. When explored by the chi square technique, a significantly larger number of students in Experimental Group I reported experiencing feelings of greater maturity. A significantly higher proportion from Experimental Group II and from the Control Group mentioned better family relations. Differences among the groups on such other categories as attaching a greater value to learning, improvement in study attitudes and techniques, feelings of greater self-confidence, and greater clarity of educational and vocational goals were not significant.

REALISM OF EDUCATIONAL-VOCATIONAL PLANS

At the beginning and again at the end of the semester, students indicated their educational-vocational plans and the degree of certainty and satisfaction with which these plans were held. The investigator then rated the degree of realism of the initial and end-of-semester plans of each student on a three-point scale. These ratings were made on the strength of a preliminary study which indicated high agreement between ratings of the investigator and three counselor-colleagues for a random sample from all groups. All available student personnel data were used in making these evaluations. When group ratings were compared, pairwise, students in Experimental Group I were rated as initially more realistic in their plans than either of the other groups. End-of-semester differences among the groups were no longer significant. This finding appeared to indicate that while there was less change in Experimental Group I, which presumably had less need to change, considerable progress had been made by the other groups in the sense that their plans became more realistic.

STUDENTS' REACTIONS

At the close of the semester, student reaction was elicited by a questionnaire devised for this study. As tested by the chi square technique, responses were significantly more favorable from the control groups on questions dealing with help in clarifying goals and values, gaining useful

information about the college, assistance with study techniques, and clarifying the value of a college education for the individual student. Responses to an item dealing with help in realizing what is involved in securing a college education, appeared to be significantly more favorable from both Experimental Group II and the Controls than from Experimental Group I. A majority of students in all groups felt they had received help in identifying their strengths, weaknesses, and vocational interests; that they had been helped in understanding themselves better; that they had a clearer picture of the value of a college education for them; and that they had an increased understanding of what is involved in securing a college education.

CONCLUSIONS

1. All groups participating in the study—in both the group counseling and the orientation class sessions—progressed in terms of one or more of the criteria employed.

a. Less troublesome personal problems were reported, on the average, on the Mooney Problem Check List by students from all groups in January as compared with September.

b. A majority from all groups considered the sessions helpful in gaining a clearer picture of themselves and of the personal demands and values of a college education.

c. On the Impulse Expression and Developmental Status scales of the Vassar College Attitudes Inventory, Experimental Group II and the Controls changed significantly in the predicted direction of normal personality development during the college years.

d. Experimental Group II and the Controls improved sufficiently, both in terms of proportions in good academic standing and in the realism of educational-vocational plans, to overcome their initial handicap in comparison with Experimental Group I.

2. In comparison with the other groups, Experimental Group I progressed the least. Possible explanations are as follows:

a. This group met with the counselor less frequently.

b. In terms of its initial advantages, it had less need to change.

3. When initial differences on the various criteria were taken into account or controlled statistically, differences between Experimentals and Controls were not sufficiently clearcut to indicate that either group counseling or the regular orientation course was the more effective. The lack of positive findings, in this sense, was interpreted as follows:

a. Neither method may, in fact, be more effective. However, it was felt that further and more definitive studies with smaller groups, to which students would be assigned on the basis of a common problem, were needed before this conclusion could be accepted.

b. The group method used may be less important than the nature of the relationships developed between the counselor and group members and between members themselves. The fact that students in this study improved under both group guidance methods, when both were employed by an experienced counselor, lends credence to this view.

SOLUTION TO PROBLEMS IN SOLOMON KULLBACK'S "INFORMATION THEORY AND STATISTICS"

by AUSTIN JEROME BONIS*

NATURE

The comprehensive set of problems solved here are those proposed by Dr. Solomon Kullback in his new book, *Information Theory and Statistics*, published in March 1959. These problems, some well known, some new, are designed to illustrate the power of the information theory approach.

VALUE

Much of this solution book might properly have been placed in the basic text. This supplementary volume overcomes original limitations of time and space. Additional theory and extensions of existing theory are presented in full. Relations to the work of Fisher and Hotelling, for example, are clearly brought out. For a handy later reference for problem solving, the solutions will be of considerable value. Their greatest return, of course, should be to the student who makes a real effort to do the problems himself.

USE

Every effort has been made to make this solution book as useful as possible. Problems and references to the text are fully quoted and frequent. Supplementary material, additional necessary background, essential elements of new theory, and outside references are inserted where needed. Much of the solution book is thus self-contained and easy to read. Alternate proofs are provided where available. Additional methods and further avenues of research are indicated.

PURPOSE

In addition to supplying the necessary research, the working through of these problems over the past year has fulfilled at least three practical purposes:

1. Tested the background and ability of a student who has taken

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the graduate courses in mathematical statistics at The George Washington University, to master the text and perform the necessary original work.

2. Illustrated the advantages of information theory methods in statistics.

3. Produced a number of new results and methods.

CLASSIFICATION

The problems may be categorized as follows:

1. Those that expand the theory (of information), completing proofs and adding new theories and results.
2. Those that apply the theory:
 - (a) to solve specific numerical problems or
 - (b) to obtain existing results by information theory methods.
3. Those that furnish results from other statistical theory for comparison and use.

DESCRIPTION OF CONTENTS

Chapter 1

The problems on theory fill in details of basic proofs. The applications are of the definition to the standard probability distributions. Background problems exhibit relations that follow from Stirling's approximation.

Chapter 2

Here the theory is on the properties of the information: positiveness, additivity, and convexity. These properties then are applied to obtain known results in communication theory. Particularly illustrated is the ease with which certain inequalities can be obtained by information methods. Auxiliary problems present the necessary and sufficient conditions for convexity.

Chapter 3

Problems on theory add to the inequalities of information theory to give results useful in later theory and problems. These inequalities are then applied to specific distributions to find numerous miscellaneous results now scattered in the literature. As background, certain algebraic relations, with useful applications, are found. Problem 7.8 opens up questions on minimal and sufficient statistics.

Chapter 4

Here the theory is extended to limits, producing some of the relationships between Type I and Type II errors which are found in sequen-

tial analysis. Other proofs exhibit limit inequalities credited to Joshi (1957). Applications show how the limit properties hold for specific distributions: Binomial, Poisson, and Negative Binomial.

Chapter 5

Problem 7.10 permits the student to develop, on his own, normal distribution theory originally worked out by Dr. Morton Kupperman in his Ph.D. dissertation in 1957. Problem 7.11 is the proof of a classification theorem which strengthens intuitive confidence in information estimates. Applications of the information statistics are made which familiarize one with confidence regions and critical values. Background material is furnished (mostly from Dr. E. L. Lehmann's lectures) on uniformly most powerful regions. These are compared with the regions found in the text.

Chapter 6

These problems all deal with multinomial populations. Proofs left to the student are filled in. Drill of technique is featured. Problem 7.10 ties in the information measure to Fisher's definitions of consistency. Applications bring out the power, elegance, and relative simplicity of the information theory for making non-parametric tests of homogeneity. The computational advantages of the information technique over the standard chi-square tests is illustrated.

Chapter 7

This Chapter duplicates the extensions of theory and ideas of Chapter 6 for Poisson populations. Application of the information theory measure to numerical problems again demonstrates the advantages of the new measure. There is no doubt that many a future manual will incorporate information methods in preference to the more complex present techniques.

Chapter 8

These problems apply to contingency tables. Some develop the theory for testing hypotheses similar to those in the text. Others formulate the theory for limiting values of the probabilities. Specific numerical problems handled, till now, under detailed analysis of variance techniques are worked out in full. Those who have despaired of seeing any unified approach to the whole mass of analysis of variance problems (each problem with its own particular "trick" solution) will be delighted with the simple, uniform method information theory provides.

Chapter 9

Here the theory returns to the important information results for multivariate normal populations. A number of standard theorems on independence are proved by information theory methods and with considerably more ease than is found in the regular texts. These alternate proofs add much to the student's understanding of the independence concept. The set of problems 10.13 through 10.20 exhibit information theory matrix results which are new and vital to the subject. These relate, in a most understandable way, information measure with multiple and partial correlation coefficients and with the various tests of independence of sets of variates. Problem 10.9 is a straightforward numerical application to verify theory. Relatively numerous ancillary proofs in matrix theory, correlation theory, and characteristic function theory, needed in this and subsequent chapters, are also shown.

Chapter 10

There are three sets of problems in Chapter 10. The first two sets fill in steps left to the student in the proofs. They familiarize him with the notation and techniques for handling the linear hypothesis, the analysis of regression, and certain mathematical fixed models. The third set of problems continues this coverage of theory and in problems 11.8 and 11.9 presents some new results and relations.

Chapter 11

Some of these problems fill in parts of proofs, others develop special cases, e.g., problem 12.14. Still others exhibit important internal relations, and bring out salient points in the text. All deal with the theory of multivariate analysis of normal populations with common covariance matrices. The theory is then applied, taking full advantage of its flexibility, to a variety of numerical problems dealing with homogeneity of means of samples, significance of correlation co-efficients, and analysis of regression. The essential similarity of these familiar tests is clearly brought out. Some of the applications (e.g. problem 12.7) offer a chance for further papers illustrating the simplicity of the basic method.

Chapter 12

Twenty-seven problems dealing with theory here cover a wide range of results, most of which are entirely new. Much that is provided has until now been obtained either by generalizations from simple tests (e.g., Bartlett's test) or from lengthy proofs in outline form (see Wilk's 1943 text). In any event, a variety of tests for homogeneity of covariance matrices, for multiple and partial correlation coefficients, and for

partial and complete independence of sets is obtained on multivariate normal populations under no assumptions of common covariance. Applications of these, and other tests, are made to numerous problems already solved by other statisticians by standard methods. Again, the greater clarity of the information theory approach becomes apparent. Some of the problems offer opportunity for alternative theoretical developments, e.g., 8.24 and 8.28. These will be investigated at a later date.

Chapter 13

The theory here concerns iteration. Many problems of this nature and suggested in this chapter still need attention and research. The student is given the necessary numerical practice for true understanding of the difficulties still to be overcome.

NOTATION AND REFERENCES

The notation, symbols, chapter numbers, and references used in the solutions are those of the basic text. Matrices have been underlined, however, to indicate bold face. See also original text for "References", "Tables", and "Glossary".

ERRATA

An interim list of errors in *Information Theory and Statistics* follows this preface.

CONCLUSIONS

The solutions of these problems, totalling 261 in all, with 150 on theory, 91 on application, and 20 on background should be strong proof that still many other new and important results can be obtained by those who master the text of *Information Theory and Statistics*. It appears, based on my experience, that many of these contributions will be made by students who will use this text and solution book and take the courses now offered at The George Washington University. Of this bright promise the University can and should be proud.

THE EARLY DEVELOPMENT OF BONE IN THE CHICK

by LLOYD EUGENE CHURCH*

The initial intent was to observe osteoblasts and osteoclasts produce and destroy bone *in situ* in the living animal under normal and abnormal conditions. The quartz rod was used to observe sinusoidal and capillary blood flow and marrow elements. However, it became necessary to study bone by conventional histological methods in order to properly interpret the histological changes seen by quartz rod illumination. Rate of growth of long bones was measured to obtain an idea of the speed of cell transformation during the first three weeks after hatching. The vascular pattern was studied for correlation with cellular behavior.

MATERIALS AND METHODS

The chick was chosen because of the excellent opportunity it afforded for subsequent study of rapid cell transformations during the egg-laying cycle. The particular chick used in this study was a cross between a New Hampshire male and a Barred Rock female.

Lengths of the bones were determined by taking X-rays of the chicks alive, dissecting the bones and X-raying them, and then directly measuring the dissected bones. All measurements were made with a Boley gauge that could be read to 0.1 mm. Direct measurements of dissected bones were from end to end. Measurements on X-rays were from end to end of the calcified bone, since uncalcified cartilage could not always be defined. Double measurements, in the living and dissected specimen, were for the purpose of detecting errors that might occur in X-raying living animals, as from foreshortening by failure of a limb to lie flat against the film. These measurements established the validity of serial measurements from X-rays of living chicks on successive days, for the direct recording of growth rates of individual bones in an individual chick. The humerus, radius, ulna, tibia, femur, and metatarsus were measured, and, when differential growth rates for each end were desired, a metal pin was placed in the mid-shaft and separate measurements made of the length from the pin to the proximal and distal ends.

All tissues were fixed in 10 per cent isotonic neutral formalin. Sections were cut at 10 microns and stained with H & E, Lepehne-Pick-

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worth, Periodic Acid Schiff, Acid Mucopolysaccharide, Bodian's, Methylene Blue, and Giemsa.

Longitudinal sections of the whole humerus were prepared, and by measuring the width of each zone of the growing end, the rate of transformation from one zone into another could be determined. These measurements were made more accurate by enlarging the sections sixty times. The measurements made were of total length, maximum diameter of the proximal epiphysis, distance between proximal end and the site of the original ossification center, diameter at the center of the shaft, diameter of Marrow cavity, thickness of the mid-shaft cortex, thickness of the various zones of cartilage and of the entire cartilage complex. The number of cells in each zone (articular, proliferative, hypertrophic, and avian metaphyseal cartilage) were measured by the projection technique. The number of cells was counted in an area of 42.5 x 55 mm at a magnification of 200. A total count of all cells in the cartilage complex was made on an imaginary boring, one cell in diameter, through the central axis, to estimate the concentration of cells in each zone. Cell size was measured by calipers from photographs of 400 magnification. From these measurements cell volume and surface area were calculated, matrix-volume determined, and the ratio of matrix-volume to cells was estimated. Cells in the proliferative zone were about twice the volume of cells of the articular zone, while the hypertrophic cells had about five times the volume of the proliferative cells and ten times the volume of articular cells.

In vivo studies of bone were accomplished by anesthetizing the chicks, exposing the end of a bone, and observing it through the stereoscopic microscope while transilluminated with the Knisely quartz rod. Methods of surgical exposure were established for the long bones, ribs, wings, and skull bones. An anesthesia technique had to be developed for studying bones of chicks this young. Combuthal, a combination of sodium pentothal and sodium nembutal was used, and provided smooth induction, with quiet and complete recovery. The intraperitoneal route proved to be satisfactory, with no unsatisfactory side effects noted. Optimum dosage was determined for each of seven days. The optimum dose was 0.05 cc for a one day old chick, and, in general, an additional 0.01 cc was needed for each additional day of age.

RESULTS

GROSS BONE STUDIES

Comparative measurements from the X-ray alive, X-ray dissected, and direct measurements of the long bones showed that X-ray of the living bone was generally a constant amount shorter than the gross specimen, since the X-ray could record only the calcified bone, while the gross measurements included uncalcified cartilage. This difference was 4 mm

for the humerus and ulna, 6 mm for the femur, and 3 mm for the tibia. Generally, all bones paralleled each other in growth.

Slopes of the curves indicated the humerus to be the most rapidly growing bone. Curves based upon the averaging of individual measurements of 400 chicks showed a constant rate of growth except for a single 24 hour suppression between the fifth and sixth days. Curves based upon daily X-ray measurement of individual chicks failed to show any such retardation at any time. Scattergram curves showed all measurements closely bunched until the sixth day, while after that, some grew very rapidly while others grew much more slowly. According to poultry scientists at the U. S. Department of Agriculture Experiment Station at Beltsville, Maryland, the yolk sac ceases to function at about the sixth day. Therefore it would appear that the growth was uniform in all chicks while nutrition was dependent upon the yolk sac, but varied widely when it became dependent upon individual physiology, probably as represented by the genetic composition of individual chicks in this cross breed. This variation was in keeping with the fact that as the chicks began to feather out, there was also a wide range of feather patterns.

Insertion of pins in the long bones did not produce any significant variation between the rate of growth of the pinned bone as compared with its paired normal control, nor between male and female. Comparison of the rate of growth of the proximal and distal ends of long bones revealed the proximal end of the humerus to be the most rapidly growing, closely followed by the distal end of the ulna.

HISTOLOGICAL STUDY

Longitudinal and cross sections were made of the humerus for each of the first ten days, the fourteenth, and the twenty-first days of development. Serial cross sections were prepared of duplicate material of the first, third, fifth, seventh, eighth, and ninth days.

The humerus could be looked upon as two cartilage complexes having the shape of a mushroom, separated by a cylinder of bone. The cartilage ends were divided into three well-defined zones: (1) articular, (2) proliferative, and (3) hypertrophic. The hypertrophic zone was further divided into uncalcified and calcified sections. Unique to birds was a wide hypertrophic zone which was uncalcified in the first two days and referred to as the avian metaphyseal cartilage. This persisted until the fifth day, after which time it gradually disappeared. By the twenty-first day, the entire cartilage complex resembled that of the mammal.

Articular cartilage was characterized by small spherical cells scattered in a compact cartilage matrix, which greatly exceeded the volume of cells. The proliferative zone consisted of close-packed cells with very little matrix. In the hypertrophic zone cartilage cells were of enormous size. The upper portion of the cartilage in this zone was uncalcified; the

lower portion was calcified. The junction of cartilage and bone marrow was characterized by loss of large amounts of cartilage associated with the appearance of a meshwork of sinusoids. Each day had its own special features, so that the age of the chick could be determined from the histological appearance.

To facilitate detailed growth study, various cartilage zones were measured, cell population per unit area determined, and the cell size calculated. By plotting parameters of long bones it was noted that the angle of the proliferating zone of the proximal epiphysis slowly changed from horizontal to vertical. This resulted from the fact that the growth plate grew faster on one side than on the other, for the zone was wider and more cellular on the rapidly growing side. This accounted for change in shape and relationships as the bone developed.

The diameter of the shaft of the bone increased most rapidly during the first ten days, while the diameter of the marrow cavity increased most rapidly during the second ten days. At ten days the thickness of the cortex was maximum because the increased diameter of the marrow cavity had not yet caught up with the increase in diameter of the shaft. This was verified by microscopic observation of the mid-shaft of the bone where the periosteal osteoblasts were stacked up like stratified epithelium. The estimated thickness of the periosteum varied from seven cells on the first day, through twenty on the fourth day, ten on the sixth to fourteenth days, to five at the twenty-first day. During the first four days the tremendous stacking up of cells was the result of rapid cell division. The cortex continued to thicken despite the falling cell count during the fourth to sixth days as the thick layer of osteoblastic cells were spread apart and separated from each other by the matrix they secreted. Eventually fewer cells came to represent a larger area and greater thickness. The increasing diameter of the first ten days, therefore, was compounded of two parts: (1) intense cellular proliferation prior to bone formation during the first four days and (2) secretion of bony matrix by these cells during the fourth to tenth day period.

During the first ten days, .5 mm of thickness was added by the periosteum. After the tenth day, the rate of cell proliferation and matrix was much slower, for scarcely more than 0.1 mm of thickness was added to the cortex during the second ten days. On some sections the cortex on one side was two to three times as thick as on the other side. Thicker areas were related to bony protuberances and muscle attachments. In general, maximum cellular thickness of the periosteum was found at the junction of the metaphysis with the shaft.

The increased diameter of the marrow cavity developed slowly during the first ten days and much more rapidly during the second ten-day period. Since diameter of the bone in the mid-shaft on the first day was exceeded by diameter of the marrow cavity at two weeks, it was apparent that cortical bone of the mid-shaft had a maximum possible life span

of thirteen to fourteen days. There was a marked increase in the number of osteoclasts accompanying bone destruction on the inner side of the cortex. On the first day these were scattered over the inner surface of the shaft, while on the second and third days osteoclasts were very rare. On the fourth day they appeared in greater number, and, by the eighth day were present in sheets over much of the inner surface of the cortex. They continued to be present in great number on the ninth and tenth days, while on the fourteenth and twenty-first days the entire mid-shaft was lined with a nearly solid sheet of large osteoclasts. The osteoclasts were not uniformly present about the circumference of the cavity, but concentrated more on one side, indicating that growth in diameter was eccentric (as was necessary to account for the change in shape). Thus, rate of growth in diameter of the marrow cavity and changes of shape of the shaft could be precisely correlated with location and amount of osteoclastic activity. In certain areas the osteoclasts destroyed bone from the outer surface, while osteoblasts laid down bone on the endosteal surface. This represented a reversal of growth in diameter and these cut-back areas illustrate the manner of remodeling of the bone surface.

There was a lack of calcification in the hypertrophic zone for the first two days. The large avian metaphyseal cartilage was reduced by one half between the fifth and sixth days, and then more slowly in the next two weeks. The width of the articular, proliferating, and uncalcified hypertrophic zones remained relatively constant.

The length of time for cartilage to go through all phases including proliferation, secretion, hypertrophy, calcification, and degeneration was calculated as averaging 48 hours. In the articular zone the cell count dropped sharply after the fifth day, while at the same time, the area occupied by a given number of cells increased. This indicated that the cells were spreading apart as each one secreted more matrix, so that each cell together with its matrix territory occupied a larger area. This was further emphasized by the ratio of matrix-volume to cells, which rose rapidly and steadily during the first ten days. Contributions to the articular cartilage were constantly made from the upper part of the proliferating zone. From the seventh day on there was an increase of paired cells within cartilage capsules, which indicated that the articular zone cells were also dividing, separating, and secreting matrix. A third source of growth of the articular cartilage was from the connective tissue cuff around the blood vessels in the cartilage vascular canals. These areas duplicated the proliferative and secretory activities seen in the perichondrium. Despite all the growth between the fourteenth and twenty-first days, the articular cartilage became thinner accompanied by an increased number of cells per unit area and a constant ratio of matrix-volume to cells. Therefore, cells and matrix must be disposed of to maintain a

constant or decreased zone thickness. This was accomplished through loss by shedding of the surface articular cartilage into the joint space.

In the upper proliferative zone, the ratio of matrix-volume to cells fell during the first week, which indicated that intense proliferation afforded little or no chance to secrete any matrix. The rise of the ratio between the sixth and eighth days indicated a period of matrix production or decreased rate of cell proliferation. After the ninth day the ratio again fell indicating another period of rapid cell division. Cells in the proliferating zone showed many mitotic figures. Variation of cell growth in different portions of the proliferative zone lead not only to a change in direction of the zone, but also to separation of the cartilage complex at the tenth day into two growing epiphyses, the head and tuberosity. Further growth in length of the bone end *between* head and tuberosity was by slower periosteal apposition.

The hypertrophic zone was characterized by a broad band of cartilage filling the metaphysis during the first five days. On the first day the entire avian metaphyseal cartilage was uncalcified. By the second day, areas of calcification began to appear around the small blood vessels near the proliferating zone. The entire avian metaphyseal cartilage had calcified within 24 hours, leaving a very narrow zone of uncalcified hypertrophic cartilage between the proliferating zone and avian metaphyseal cartilage.

Destruction of the hypertrophic cartilage was by osteoclasts arising from marrow elements which accompanied the blood vessels as they invaded the cartilage from the marrow cavity. On the third day a few osteoclasts were seen at the ends of the vascular canals. These increased in number so that by the sixth day intense osteoclastic activity had disposed of 90 per cent of the cartilage. This was followed by a period of intense proliferation of undifferentiated marrow cells, which subsequently differentiated into osteoblasts that secreted a thick covering of bone on the thin remaining strands of cartilage during the seventh and eighth days. Meanwhile, the bone was growing in length and the entire cycle of proliferation, secretion, vascular ingrowth, and osteoclastic resorption repeated itself, so that by the tenth day two cycles were simultaneously visible and appeared as separate zones of osteoclastic and osteoblastic activity in longitudinal sections.

Since growth curves established that the bone grew 1 mm in length in 24 hours, it was now possible to measure the space concerned with any cell activity and calculate the duration of that activity. After the tenth day, such measurements demonstrated a cycle composed of three periods. The first 18 hour period began with a 2½ hour burst of osteoclastic activity in tunneling into the hypertrophic cartilage. Then followed a 5 to 6 hour quiescent phase leading to a 10 hour period of preliminary osteoblastic activity.

The second 18 hour period was marked by a massive osteoclastic phase which destroyed 90 per cent of the cartilage in 10 hours. Then follows 8 hours of intense proliferation of marrow cells to produce a mass resembling a sarcoma. This proliferation appeared to be the result of the metabolic products released by the preceding rapid destruction of the cartilage.

The third period, ranging from 36 to 48 hours, began with the differentiation of the sarcoma-like mass of marrow cells into osteoblasts which in 18 hours of continuous secretory activity add a $\frac{1}{2}$ mm layer of bone to the surface of the residual thin strands of cartilage, to produce the primary trabeculae with their cartilage cores.

At the end of this cycle a third wave of osteoclastic activity destroyed the numerous primary trabeculae in 2 to 3 hours. This was followed by osteoblastic secretion of second trabeculae which are fewer in number and apparently stronger and more efficient.

We may summarize the time data regarding growth in length as follows: Passage through the proliferative, secretory, and uncalcified hypertrophic zones required 12 hours (6 hours of proliferation and 6 hours of secretion and precalcification hypertrophy). Calcification of cartilage was associated with osteoclastic destruction in three phases of 2½ hours, 10 hours, and 2 to 3 hours which, respectively, initiate tunneling, eliminate 90 per cent of the cartilage, and eliminate primary trabeculae. These three periods were separated by two phases of osteoblastic activity, the first compounded of 5 to 6 hours of quiescence followed by 10 hours of preliminary bone secretion. The second was compounded of 8 hours of intense mesenchymal cell differentiation of the osteoblasts. The total cycle from proliferative zone to elimination of primary trabeculae required about 96 hours, or 4 days. Half of this time was consumed in the transformation of the cartilage complex, and half was concerned with development of primary trabeculae of bone encasing the residual cartilage cores.

VASCULAR STUDIES

Cartilage and bone activity were supported by three separate vascular systems. Two of them support the growth in length at the end of the bone. A set of small capillary vessels entered the cartilage from the periphery and extended as hair pin loops into the articular zone. Another group of vessels, sinusoidal in nature, extended from the marrow cavity into the hypertrophic cartilage (with a few tiny extensions into the proliferative zone). The third vascular bed was periosteal in location and supported the growth of the shaft in diameter.

INFORMATION THEORY AND THE STATISTICAL PROBLEM OF DISCRIMINATION

by SAMUEL W. GREENHOUSE*

This dissertation is concerned with the application of Information Theory to the problem of discrimination between statistical populations. Very little work appears in statistical literature on the determination of a linear function of random variables to discriminate between two multivariate populations when the variance-covariance matrices differ in the two populations. This is a result primarily of the lack of a suitable criterion. The likelihood ratio principle in this instance yields a quadratic function of the variables. This function admittedly has those optimum properties associated with likelihood ratio solutions. However, the linear function is so much more convenient to work with than the quadratic and its distribution is so much easier to obtain that it is desirable and of general interest to find a "best" linear discriminant.

The formulation of Information Theory by S. Kullback has made it possible to apply an objective criterion to this problem. This dissertation presents the results of an investigation of the linear discriminants implied by Information Theory and of comparing them with those obtained by other criteria. The properties of these discriminants were studied in the population.

In addition, one section (section X) is devoted to some theoretical considerations on the relationship between two information measures.

We deal with two populations π_1 and π_2 in each of which the random vector $\mathbf{x}' = (x_1, x_2, \dots, x_p)$ has a joint normal distribution with mean $\underline{\mu}_k$ and variance-covariance matrix $\underline{\Sigma}_k$, $k = 1, 2$. (The underscoring of a letter denotes a matrix or vector.) We consider the class of linear functions $y = \mathbf{w}'\mathbf{x}$, where the prime represents the transpose of a matrix. It is well known that y is normally distributed with mean $v_k = \mathbf{w}'\underline{\mu}_k$ and variance $\Sigma_k = \mathbf{w}'\underline{\Sigma}_k\mathbf{w}$ in π_k , $k = 1, 2$.

From Information Theory, applied to the case of a normal variable, we have that the mean information per observation y from π_1 for discriminating between π_1 against π_2 is

$$I(1:2) = \frac{1}{2} \log \frac{\Sigma_2}{\Sigma_1} - \frac{1}{2} + \frac{1}{2} \frac{\Sigma_1}{\Sigma_2} + \frac{1}{2} \frac{(v_1 - v_2)^2}{\Sigma_1}.$$

Similarly the mean information per observation y from π_2 for discriminating between π_2 against π_1 is

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$$I'(2:1) = \frac{1}{2} \log \frac{\Sigma_1}{\Sigma_2} - \frac{1}{2} + \frac{1}{2} \frac{\Sigma_2}{\Sigma_1} + \frac{1}{2} \frac{(v_1 - v_2)^2}{\Sigma_1}$$

Finally, the divergence between π_1 and π_2 is the sum of the two informations, namely,

$$J'(1,2) = I'(1:2) + I'(2:1) \\ = \frac{1}{2} \left(\frac{\Sigma_1}{\Sigma_2} + \frac{\Sigma_2}{\Sigma_1} \right) - 1 + \frac{(v_1 - v_2)^2}{2} \left(\frac{1}{\Sigma_1} + \frac{1}{\Sigma_2} \right)$$

It is customary in Information Theory to use the prime to denote information and divergence inherent in a function of the original variables x . It is noted that the manner in which the unequal variances of the variable y enter in these information measures follows naturally from the definition of information. Of course, when these measures are functions of the population μ and σ , they are in fact population parameters.

Since I' and J' are functions of the unknown linear coefficients \underline{w} , they provide the objective criteria we seek for finding a linear discriminating function. The principle is simply to maximize the information parameter with respect to variations in \underline{w} . Since there are three distinct parameters, we will obtain three distinct linear functions. It is pointed out that in the special case when $\underline{\sigma}_1 = \underline{\sigma}_2$ and therefore $\Sigma_1 = \Sigma_2$, maximization of I' and J' yield one derivative equation from which we obtain the solution, $\underline{w}' = \underline{\sigma}^{-1}\underline{z}$. This is identical to Fisher's solution and to the likelihood ratio solution of the discrimination problem.

From the maximization of $I'(1:2)$, $I'(2:1)$, and $J'(1,2)$, we obtain the respective solutions of \underline{w} in the following matrix equations:

$$\underline{a} = (\sigma_1 + \lambda \sigma_2)^{-1} \underline{z}$$

$$\lambda_a = \frac{a' \sigma_1 a (a' \sigma_1 a - a' \sigma_2 a + (a' \delta)^2)}{a' \sigma_2 a (a' \sigma_2 a - a' \sigma_1 a)}$$

$$\underline{b} = (\sigma_1 + \lambda_b \sigma_2)^{-1} \underline{z}$$

$$\lambda_b = \frac{b' \sigma_1 b (b' \sigma_1 b - b' \sigma_2 b + (b' \delta)^2)}{b' \sigma_2 b (b' \sigma_2 b - b' \sigma_1 b + (b' \delta)^2)}$$

$$\underline{c} = (\sigma_1 + \lambda_c \sigma_2)^{-1} \underline{z}$$

$$\lambda_c = \frac{c' \sigma_1 c ((c' \sigma_1 c)^2 - (c' \sigma_2 c)^2 + (c' \sigma_1 c)(c' \delta)^2)}{c' \sigma_2 c ((c' \sigma_2 c)^2 - (c' \sigma_1 c)^2 + (c' \sigma_2 c)(c' \delta)^2)}$$

where the \underline{a} , \underline{b} , and \underline{c} , represent the different solutions of the \underline{w} . From the definitions of the λ , it is clear that these are implicit solutions of the \underline{w} . It is therefore necessary to carry out an iterative procedure to obtain specific discriminants in any particular problem.

Since the derivative equations are nonlinear in the \underline{w} , we are unable to obtain the \underline{w} as an explicit function of the $\underline{\mu}$ and $\underline{\sigma}$. As a result, it is extremely difficult to investigate theoretically the properties of these linear discriminants. We therefore apply them to two numerical problems, one in two dimensions and the other in three dimensions. We arbitrarily consider π_1 to be that population in which the variances are smaller.

In order to assess the performance characteristics of the information discriminants, we discuss and apply to the same problems three linear functions based on other criteria. One of these is found by pooling $\underline{\sigma}_1$ and $\underline{\sigma}_2$ in which case we obtain an explicit solution. The other two are obtained by applying a principle of minimizing errors of classification. The specific criteria used here is to minimize the error of classifying an individual from π_1 for a fixed error of classifying an individual from π_2 and, similarly, to minimize the error of classifying an individual from π_2 for a fixed error of classifying an individual from π_1 . The latter two discriminants also have to be found by means of an iterative procedure.

Thus, we find six linear discriminating functions in each problem. For each discriminant, two major sets of properties are found. The first set consists of information characteristics and the second set consists of the errors of classification associated with each discriminant.

In both examples, the discriminant maximizing $I'(1:2)$, the discriminant obtained by pooling and the two discriminants resulting from the error criteria are very similar in their information and errors of classification properties. In particular, the discriminant maximizing $I'(1:2)$ gave smaller errors of classification than the other two information discriminants. Of interest was the result that the pooled discriminant, despite the fact that the difference in variances is disregarded in its computation, does so well when compared to the other functions. Information Theory sheds some light on why this is so.

In both problems, $I'(1:2) < I'(2:1)$. These observations suggest certain considerations on the relationships between $\underline{\sigma}_1$ and $\underline{\sigma}_2$ on the one hand and $I'(1:2)$ and $I'(2:1)$ on the other. It is proved that if \underline{x} is multivariate normal and if $\underline{\sigma}_1 - \underline{\sigma}_2$ is positive definite then $I(1:2) < I(2:1)$. We also show that if $\underline{\Sigma}_1 < \underline{\Sigma}_2$, then $I'(1:2) < I'(2:1)$ and also that maximum $I'(1:2) < \text{maximum } I'(2:1)$. The first of these is also derived for the univariate binomial and Poisson. A theorem which is then suggested but not proved is that the linear discriminant obtained by maximizing $I'(1:2)$, where $I'(1:2)$ is smaller than $I'(2:1)$, will have smaller errors of classification between π_1 and π_2 than the other two information discriminants.

In the application of discriminant analysis in practice, it is suggested on the basis of the results obtained here that when \underline{S}_1 differs from \underline{S}_2 with only moderate differences between the sample mean vectors \underline{x}_1 and \underline{x}_2 ,

a very good linear discriminant can be obtained rather easily by pooling \underline{S}_1 and \underline{S}_2 . This discriminant, in fairly large sized samples, will compare favorably with more precise discriminants in its error performance when applied to the populations. It is assumed, however, that the discriminant obtained by pooling covariance matrices is applied to populations where the covariance matrices are kept distinct.

THE LAW OF LARGE NUMBERS AND RELATED THEOREMS

by HARRY WEINGARTEN*

A study is made of the development of the law of large numbers from its origin in the work of Bernoulli, to the present-day treatment of the same and related problems. Consideration is given to the Tchebycheff inequality and inequalities of this type, not only for the interesting results they contain but also for their utility in providing simple proofs of the weak law of large numbers. It is seen that Bernoulli's result and the inequalities of the Tchebycheff type are versions of what has come to be known as the weak law of large numbers. The strong law of large numbers whose intrinsic nature is fundamentally based in deep measure-theoretic notions, still defies complete elucidation. In this connection, there exists no generally accepted set of necessary and sufficient conditions for the strong law to hold.

In an attempt to carry out a suggestion by Chung that study of probabilities of the form $P(|s_n| \geq nc)$ might lead to a better understanding of the strong law of large numbers, an intensive investigation is made of the law in all its forms. As a result, it is quickly recognized that problems in gambling, random walk, and sequential analysis are not only related but very intimately connected. In the course of this study, the author demonstrates that both gamblers' ruin and sequential analysis provide the identical solution to a general class of probability problems. Unfortunately, these studies, while they do permit consideration of the particular probability question raised by Chung, do not lead to sharp inequalities for this probability. Sharp inequalities seemed to Chung to provide the best hope of attack on the question of the intrinsic nature of the strong law of large numbers.

It turns out that for this purpose some work by S. Bernstein not only improves the probability statements but leads to the notion of a rate of convergence of the probability for $P(|s_n| \geq nc)$, at the same time that the law of large numbers is proved true. In addition a general class of distribution for which $P(|s_n| \geq nc)$ is considered, appears in the work of Blackwell. This work, too, provides a rate of convergence but unhappily not the best one. In this connection, the author is able to produce a theorem which is not only applicable to a general class of problems in gambler's ruin, random walk, and sequential analysis but, when applied to the notion of providing the best rate of convergence for

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a large class of probabilities of the kind $P(|s_n| \geq nc)$, also provides the best rate. Various extensions of the major result of the author are also considered.

Finally, a brief glance at some related work for Tchebycheff inequalities in more than one dimension and some modern approaches to the problem of the basis of the law of large numbers, is illustrative of the fact that many avenues of attack on the central problem are possible and that we have considered only a few.

THE INFLUENCE OF NATURE OF CONCEPT AND FORM OF PRESENTATION ON CONCEPT ATTAINMENT

by MARGUERITE LOUISE YOUNG*

An experiment was performed to determine the influence of two variables on concept attainment. These variables were: (1) the nature of the concept and (2) the form of presentation of the instances of the concept.

It was felt that the lack of clear-cut results obtained in previous investigations of these two variables in concept formation or concept attainment studies may have been due to initial differences in the perception of the concept materials by the subjects. Therefore, a procedure was developed to determine the already existent response tendencies of subjects to a group of seventy-five concrete objects. These objects were presented to the subjects in two forms—verbally (the name of the object) or pictorially (a picture of the object). A procedure for rating these materials on twenty concept systems was fashioned after studies of the Semantic Differential. Each of the seventy-five objects was rated by 101 subjects. Twenty-nine men and twenty-four women rated the verbal material and twenty-four men and twenty-four women rated the pictorial material. The objects were rated on the following bipolar items: *round-angular, heavy-light, large-small, short-tall, soft-hard, narrow-wide, strong-weak, straight-crooked, quiet-noisy, and fast-slow.*

The subject indicated for each object, presented by name or by picture, the direction of association of the object in the concept systems and also indicated the strength of his association by rating the stimulus on a seven-step scale. Five of the concept scales had been judged as representing visual perceptual concepts and five had been judged as representing nonvisual perceptual concepts.

In the analysis of the rating scale data the problem was to determine whether for any of the objects presented verbally or pictorially, there were significant sex differences in the ratings regardless of the manner of presentation or whether there were significant differences in the ratings due to the manner of presentation of the stimulus material regardless of the sex of the subjects. Median test analysis was made of the ratings of those objects which were rated in the extreme scale positions by the subjects so that, in turn, those objects could be used as examples of the concepts in the later concept attainment study.

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It was found that the median ratings of the combined groups fell in the first two or last two scale positions for 228 of the possible 750 ratings. These ratings represented sixty-nine objects. No extreme ratings were made for any of the seventy-five objects on the concepts *short*, *weak*, *slow*, *wide*, or *crooked* although extreme ratings on their antonyms were obtained. For only six of the objects there were no ratings which fell in the extreme scale positions on any of the twenty concepts. It was determined from the data analysis that women made consistently more extreme ratings than men. It was also found that for the verbal material more extreme ratings were made when the objects were rated on the nonvisual perceptual concepts. For the pictorial material, more extreme ratings were made when the objects were rated on visual perceptual concepts. For the visual perceptual concepts, there were no differences in the number of extreme ratings when either verbal or pictorial material was presented. However, on the nonvisual perceptual concepts, more extreme ratings were made when the subjects rated the verbal material than when they rated the pictorial material.

In the concept attainment study, three hypotheses were tested. These were (1) concept attainment will be more rapid and more concepts will be attained when visual perceptual concepts are presented pictorially than when they are presented verbally, (2) concept attainment will be more rapid and more concepts will be attained when nonvisual perceptual concepts are presented verbally than when they are presented pictorially, and (3) pictorial presentation of the objects will evoke a larger number of concept responses than will verbal presentation.

In the study, examples of each of five visual and five nonvisual perceptual concepts were selected from the pool of sixty-nine objects. These objects representing the concepts were selected by the following criteria: they were rated as being dominate on the concept for which they were not an example, the ratings of the object by the men and women were not significantly different at less than the .10 level, and the ratings of the verbal examples were not significantly different from the ratings of the pictorial examples at less than the .10 level. Forty men and forty women University summer school students volunteered to serve as subjects for the experiment. Each was assigned to one of the four experimental groups in order of appearance for the testing session and tested individually. The four groups of twenty subjects each were (1) those presented visual perceptual concepts with instances of the concept presented verbally, that is, the name of the object was presented; (2) those presented the same visual perceptual concepts but with the instances of the concepts presented pictorially; (3) those presented nonvisual perceptual concepts with concept instances being verbal in nature; and (4) those presented the same nonvisual perceptual concepts with the instances pictorial. The subjects were shown one at a time, five instances of the

concept and were required to name the concept represented by the instances. The instances of each concept were presented to the subject five times and if he did not name the correct concept in these five trials, he was shown a multiple-choice list of concepts and required to select the correct one.

The results of the study were analyzed in terms of the number of concepts attained, the number of trials to concept attainment, and the type of response made after each trial for each concept. The results may be summarized as follows:

1. Analysis of variance revealed a significant interaction effect between the type of concept and the form of presentation of the instances of the concept. This interaction was significant at less than the .05 level and indicated differential attainment of the concepts depending upon the form of presentation of the instances of the concept. A test of the significance of the difference between the means for the groups presented the visual perceptual concepts verbally or pictorially indicated that there was a significant difference at less than the .05 level. The group presented the instances of the concepts pictorially attained more concepts. The test of significance of the difference between the means for the groups presented the nonvisual perceptual concepts revealed that significantly more concepts were attained when the form of presentation of the instances was by verbal material.

2. Analysis of the data revealed no significant differences in the number of trials to attain the visual and nonvisual perceptual concepts regardless of the manner of presentation of the instances of the concepts.

3. When analysis of the responses of those subjects who did not attain the concepts was made, it was found that more incorrect concept responses were given when the instances of the concepts were pictorial than when they were verbal. This result suggests that pictorial material, when it is used to present instances of nonvisual perceptual concepts, serves as a potent distractor to the attainment of nonvisual perceptual concepts.

The results were discussed in terms of their relationship to the Heider-type studies and interpreted in terms of a mediation theory of concept learning. The implications of the results were also discussed as these bear upon the use of teaching aids and training devices.

In conclusion, evidence from the present study and from other research indicate that confusion and inefficient learning may result when concrete materials are used to present abstract concepts. It would appear that orientation to nonessential features of these concrete instances serves to hamper the attainment of this type of concept. However, the use of models, pictures, and other concrete material may aid in the attainment of concepts in which the relevant cue to the concept is contained in the instances of the concept to be attained or learned.

STUDIES ON THE ROLE OF ASCORBIC ACID IN TYROSINE METABOLISM

by VINCENT GERALD ZANNONI*

Ascorbic acid differs from nearly all of the other vitamins in that there is no evidence that it participates directly as a coenzyme or indirectly as a precursor for the synthesis of a coenzyme for any of the known enzyme reactions. However, an outstanding property of the vitamin is the ease with which it undergoes oxidation and reduction, and many of its functions in biochemical systems have been attributed to this property. The abundance of ascorbic acid in both plant and animal tissue suggests its physiological importance and has stimulated biochemical interest as to the role of this vitamin in plant as well as animal metabolism.

The participation of ascorbic acid in tyrosine metabolism is of major biochemical interest since the vitamin has been shown to have a role in one of the specific enzymatic steps in tyrosine catabolism which is deficient in scorbutic animals. Early *in vivo* studies demonstrated that scorbutic guinea pigs fed large amounts of tyrosine excreted tyrosyl compounds in the urine. However, it was not until studies with soluble enzyme preparations were carried out that the main site of action for ascorbic acid was localized in the oxidation of p-hydroxyphenylpyruvic acid to homogentisic acid. The *in vivo* observations are in agreement with these findings in that scorbutic guinea pigs, scorbutic humans, and premature infants fed extra tyrosine all excreted p-hydroxyphenylpyruvic acid in the urine, and these abnormalities were alleviated with the administration of ascorbic acid.

At one time ascorbic acid was proposed as a specific coenzyme in the conversion of p-hydroxyphenylpyruvic acid to homogentisic acid. However, more recently, it has been shown that other compounds with similar redox properties can replace it, such as reduced 2,6-dichlorophenolindophenol, hydroquinone, and D-isoascorbic acid, indicating that the vitamin is not participating as a structurally specific coenzyme, but rather through its redox properties. It has been shown recently that ascorbic acid has the ability to protect p-hydroxyphenylpyruvic acid oxidase, the enzyme involved in the conversion of p-hydroxyphenylpyruvic acid to homogentisic acid from inhibition in the presence of excess substrate. The various activators act similarly to ascorbic acid in that they also prevent the inhibition of the oxidase by excess substrate, thereby allowing more substrate to be ultimately oxidized. It is evident that in order to learn

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more about the exact function of ascorbic acid in tyrosine metabolism, one must study the interrelated phenomena of substrate inhibition and its prevention by the vitamin.

A comparison of the relative effectiveness of ascorbic acid and reduced 2,6-dichlorophenolindophenol in preventing the inhibition of p-hydroxyphenylpyruvic acid oxidase has been made. Studies with crude enzyme preparations of dog liver homogenates demonstrated that reduced 2,6-dichlorophenolindophenol was at least 150 times as effective as ascorbic acid on a molar basis. Further treatment of the liver homogenate with chloroform has shown that reduced 2,6-dichlorophenolindophenol was at least 700 times as effective as the vitamin and further purification with ammonium sulphate fractionation, and absorption and elution with calcium phosphate gel, did not change this ratio.

Studies on the nature of substrate inhibition indicated that the primary factor involved in inhibition was the ratio of the concentration of oxidase to the substrate. Manometric and spectrophotometric assay methods were used to study the effect of varying the ratio of enzyme concentration to substrate concentration. If the low concentration of substrate usually used in the spectrophotometric assay method were increased so that the ratio of substrate to oxidase was equivalent to that in the manometric assay, equivalent substrate inhibition occurred. Moreover, the oxidase was perfectly capable of oxidizing large amounts of p-hydroxyphenylpyruvic acid providing it was gradually generated from L-tyrosine, even though the enzyme was inhibited when this amount of substrate was exposed to it at a single time.

The inhibition of p-hydroxyphenylpyruvic acid oxidase by excess substrate is unusual in that the initial rate of oxidation (from 2.5 μ moles to 40 μ moles of p-hydroxyphenylpyruvic acid) is not affected, but the inhibition occurs after a lag period of from 10 to 15 minutes. The kinetics of this type of inhibition has been studied and the influence of substrate, reducing agents, and enzyme concentration on this inhibition has been evaluated. Although the initial rate of p-hydroxyphenylpyruvic acid oxidation, as well as the time of onset of inhibition, is unaffected with increasing substrate concentrations, the rate of inactivation of the oxidase, once it does occur, is very much dependent upon the amount of substrate present. At the time of inhibition there is a sharp break to a new reaction rate of zero order kinetics, and it is this new reaction rate which is a measure of the inactivation of the oxidase. In fact, at the time of the break from the initial reaction rate, the resulting kinetics of the reaction implies that suddenly less enzyme is available to the substrate. This behavior of p-hydroxyphenylpyruvic acid oxidase differs from the usual type of enzyme inactivation. One might expect to find a first order reaction constant, as for example, the destruction of catalase by hydrogen peroxide.

The major effect of reducing agents (ascorbic acid or reduced 2,6-dichlorophenolindophenol) is to alter the extent of inactivation of the oxidase rather than the time of onset of inactivation. This effect of reducing agents was found to be dependent upon the amount of reducing agent present, and with increasing concentrations the slope of the reaction rate after the time of onset of inhibition approached the value of the initial reaction rate.

Studies on the reactivation of inhibited p-hydroxyphenylpyruvic acid oxidase preparations demonstrated that the inhibition by excess substrate was essentially irreversible once it had taken place. The oxidase could not be reactivated by prolonged dialysis even after all the detectable amount of substrate had been removed. However, although dialysis did not reactivate the inhibited enzyme, the reducing agents did cause a gradual reactivation.

Since there was no inhibition on the initial rate of oxidation with high concentrations of p-hydroxyphenylpyruvic acid, the delayed inhibition observed could be due to the formation of small amounts of an inhibitor formed from the substrate during the course of the reaction. Analogs of the substrate were therefore tested for their inhibitory effect on the oxidase in the hope that a compound could be found which would have similar inhibitory properties to the inhibition observed with excess substrate. The inhibitors which were most effective on the p-hydroxyphenylpyruvic acid oxidase system all had the structural characteristics of a phenyl group, and a side chain containing either a carbonyl or free aldehyde grouping. Phenylpyruvic acid was one of the most potent inhibitors of the enzyme, and further studies with this compound were done in order to compare its inhibitory properties to those of excess substrate.

Comparative studies of the inhibitory effect of phenylpyruvate and excess substrate have shown that the type of inhibition on p-hydroxyphenylpyruvic acid oxidase exhibited by phenylpyruvate closely resembles that of excess substrate. For example, the kinetics of the inhibition, prevention of the inhibition by reducing agents, irreversibility of the inhibition by prolonged dialysis, the reactivation of the inhibition by reducing agents demonstrate the similarity of the inhibition produced by either phenylpyruvate or excess substrate. Furthermore, very low concentrations of phenylpyruvate have been shown to have the capacity to inhibit the oxidase (4 γ of the inhibitor, preincubated with the enzyme in the presence of oxygen caused up to 80 per cent inhibition). The latter finding is in keeping with the idea that if an inhibitory product were formed in the presence of excess substrate, it could be generated in very small amounts, since most of the p-hydroxyphenylpyruvic acid is oxidized through the normal pathway to homogentisic acid.

Further evidence in favor of the accumulation of an inhibitory product

during the course of oxidizing large amounts of p-hydroxyphenylpyruvic acid was obtained in studies in which purified oxidase preparations were added to the reaction mixture during the course of oxidation of excess substrate. One would expect that if an inhibitory product were accumulating there would be an initial effect on the activity of the added purified enzyme (due to the accumulated inhibitor). There was found at least a 50 per cent decrease in the activity of the purified enzyme (as measured by the initial rate of oxidation of p-hydroxyphenylpyruvic acid) when it was added during the course of oxidizing large amounts of substrate. Secondly, comparative studies with extracted inhibited incubation mixtures (inhibited by phenylpyruvate or excess substrate) have shown that the addition of these fractions to an active oxidase system also caused an initial inhibition of the active enzyme. Furthermore, these studies demonstrated that as little as 0.1 μ mole of phenylpyruvate inhibited active enzyme to the same extent as was obtained when 20 μ moles of p-hydroxyphenylpyruvic acid were used to generate an inhibitory product.

The function of ascorbic acid in preventing the inhibition of p-hydroxyphenylpyruvic acid oxidase may rely on its capacity to protect the active sites of the enzyme. This protection may be brought about by the oxidation-reduction properties of the vitamin. Perhaps the active sites of the oxidase have to be maintained in a reduced state in order to protect them from any detrimental effects of a side product formed during the oxidation of large amounts of substrate.

SUMMARY OF DISSERTATION
SUBMITTED FOR
THE DEGREE OF
DOCTOR OF JURIDICAL SCIENCE

THE CRIMINAL NET WORTH DOCTRINE

by ROBERT MILTON SCHMIDT*

In recognition of the universal distaste for the payment of taxes, the Congress has imposed a variety of sanctions, both of a civil and a criminal nature, to protect the self-assessment system of our federal income tax. The capstone of this hierarchy of sanctions calculated to induce prompt and forthright fulfillment of the duty to pay income taxes is Section 7201 of the Internal Revenue Code of 1954 prescribing felony treatment for any person who willfully attempts in any manner to evade or defeat any tax. In addition to the proof of the willful commission of an affirmative act constituting an attempt to evade and defeat taxes, it is essential that the prosecution prove there is an additional tax due and owing. This requisite understatement of income and tax is often proved by direct evidence, but the courts have also sanctioned theories of proof utilizing circumstantial evidence as appropriate and necessary means of bringing tax evaders to justice. The principal circumstantial evidence theory of proof is the net worth premised on the logic that cash expenditures by a taxpayer in any year in question which exceed all his known cash resources including his reported income may give rise to the inference that he has in fact received more income than he has reported.

During the past two decades the net worth method has evolved from a method utilized primarily as a means of bringing tax evading racketeers to justice to the present application of the method to tax evaders irrespective of their calling or reputation. This broadened application of net worth proof is a cogent reason for the study of net worth prosecutions which were formerly notable for the ingenious novelty of the method and the notoriety of the defendants. In all probability the association of the net worth method with the prosecution of underworld characters actually impeded the development of the technique in the non-racketeer area by the erection of presently overruled prerequisites to the use of net worth proof and other confining requirements to the proof of current income. Although there has been this change of personalities involved in net worth prosecutions, the material portions of the net worth theory have remained constant. It is, therefore, a tribute to the theory as an evidential formula that it has measured up to the high standard of legal sufficiency required by a proper and scrupulous respect for the human dignity of all taxpayers regardless of how they earn their income.

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Although there is no comparable stylized pattern of circumstantial evidence in the proof of other crimes, the basic net worth theory of tracing cash or other property into the hands of an accused is not without analogy in common law crimes. Before the twentieth century, courts quite generally recognized the principle that unexplained possession of the fruits of crime, recently after its commission, justifies the inferences that the possession is guilty possession, and constitutes *prima facie* evidence of guilt. This principle is frequently applied in proving the crimes of illegal possession of recently stolen property, robbery, larceny, and burglary, but unfavorable inferences may also be drawn in other cases where the defendant is on trial for a crime which is ordinarily committed for pecuniary gains.

Coupled with the intrinsic wisdom in the common law analogies is the pragmatic justification that jurors are applying a standard frequently employed by reasonable men in making business and social judgments. Businessmen make frequent decisions entailing the lending or borrowing of money based upon a balance sheet type appraisal of their own or another person's net worth. Similarly, a person's social status is often determined by an appraisal of his apparent net worth. In the presence of these daily judgments taxpayers are not being convicted on a theory peculiarly adopted for criminal tax prosecutions.

Throughout the early appearance and subsequent widespread acceptance of the net worth method by all circuits and the Supreme Court, the method has been the subject of a considerable amount of literature which has generally discussed the theory or its application in dissident terms. Summarized briefly, the charges against the theory have been that (1) it is based upon the untrustworthy "assumption" that there are only visible assets, (2) the burden of proof is improperly shifted to the taxpayer to prove his innocence, (3) net worth increases are illogically "assumed" to be attributable to currently taxable income, (4) willfulness is inferred as a result of pyramiding inferences upon inferences, and (5) net worth increases as the sole proof of tax evasion derogate from the affirmative acts requirement of the willful attempted evasion offense.

Despite the mounting criticism by members of the bar, the United States Supreme Court has authoritatively sanctioned the net worth method with safeguarding elements as an appropriate theory of proof. Although lending a seemingly sympathetic ear to the urging of taxpayers by recognizing the possible dangers and pitfalls inherent in the method, the Supreme Court's actual holdings have eased the Government's burden in net worth cases. The Court has ruled that the Government need not negate every possible source of nontaxable receipts where relevant leads are not forthcoming from the taxpayer. The Court has ruled that the net worth method is not a method of accounting, and, accordingly, there is no necessity to disprove a taxpayer's books and records as a pre-

requisite to the use of net worth proof. The Court has also ruled that the Government is not foreclosed from using net worth proof when a diligent investigation has failed to reveal a likely source of income as long as all nontaxable sources of receipts are negated. Finally, the Court has reaffirmed the principle that the Government need not prove the exact amount of evaded taxes.

In addition to the formal elements of any tax crime which must always be proved, the Supreme Court decisions hold that there are presently only three essential conditions to be met by the prosecution in the use of the net worth method:

1. An opening net worth which is the foundation for the calculation of subsequent net worth increases must be established with reasonable accuracy.

2. There must be evidence supporting the inference that the net worth increases are attributable to currently taxable income.

3. The Government must effectively negate reasonable explanations or leads furnished by the taxpayer which are inconsistent with guilt and which are reasonably susceptible of being checked.

Significantly, during this process of liberalization of the net worth requirements there has never been a written dissenting opinion in any of the six net worth cases decided by the Supreme Court. The underlying philosophy appears to be one of insuring the collection of the revenue by allowing the Government wide latitude in the use of all available evidence. Consequently, there is no need for a legislative authorization of the use of the net worth method, and rightly so, because in the final analysis the Court is approving probative evidence of income and not a method of accounting.

By the same token, the proven necessity for protecting the revenue bloodstream by the use of the net worth method effectively precludes any serious consideration of proposals that net worth proof should be prohibited or curtailed by statute.

The evaluation of the particular judicial interpretations of the various component parts of the net worth theory can best be accomplished by the following specific categorization:

Definition.—Although most net worth type cases follow the pattern of showing an increase in net worth plus personal nondeductible expenditures less nontaxable receipts, there is, and should be, no rigid definition lest there be a foreclosure of circumstances from which a jury could reasonably be convinced that there is unreported income. There is already a recognized tendency to convert so-called expenditures cases into net worth cases for better jury appeal and understandability. Moreover, it can be anticipated that there will be a further decomposition of the traditional categories of net worth and expenditures type proof.

Prerequisites to the Use of Net Worth Proof.—In addition to not re-

stricting net worth evidence to stereotyped formulae, the present judicial decisions hold that resort to net worth proof does not depend upon and need not await legislative sanction. Hence, net worth proof may be used just as any other kind of proof as the prime method of proof or as corroboration of other theories of proof. The method may also be used if the taxpayer maintains books and records, if the unreported income is from a disclosed source as well as from an undisclosed source, and if the unreported income is from a successfully concealed source.

The permissible latitude in the use of the net worth method poses the question of the area of appropriate use of such proof. In theory the net worth method will reflect the same net income as a profit and loss computation obtained from a double entry set of books embodying the same transactions. In practice the net worth method is necessarily an approximation, and, consequently, its application to taxpayers in the low income brackets presents the greatest area of possible danger because the margin for error is the smallest. Despite this danger, any barring of net worth proof as to such taxpayers would amount to a *carte blanche* invitation to tax evasion through the simple expedient of destroying available books and records. Businessmen, farmers, and other taxpayers can be safeguarded from the danger of a prosecution predicated on unrealized income by appropriate adjustments bringing net worth proof into conformity with the taxpayer's method of accounting and the tax law.

The merits and demerits of using the criminal income tax sanctions as a means of bringing racketeers to justice has been frequently discussed, but there has been no comparable suggestion that the net worth method should not be applied to individuals classified under the racketeer heading. Quite the contrary, the contentions have been that the net worth method should be confined to the racketeer area and not used against so-called respectable taxpayers. The urged restriction on net worth proof carries an implication of a double standard of justice without a recognition that the requisite specific tax evasion motive is an impersonal standard placing all guilty taxpayers in the same category. The argument also constitutes a tacit confession that net worth proof is sound evidence and that collateral considerations of social policy, rather than any weakness or fault inherent in the method, should limit its application. The conclusion is that net worth evidence is not, and should not be, precluded from use against any class of taxpayers.

Starting Point Requirements.—The confusion founded by holdings and dictum in cases attempting to apply the reasonable hypothesis rule as a standard for measuring the sufficiency of starting point proof was largely dispelled by the requirement of only reasonable certainty as to starting point proof. Utilization of the reasonable hypothesis rule by appellate courts sometimes resulted in the acceptance of an explanation of innocence totally rejected by the jury. Under the Supreme Court stand-

ard there is no "assumption" that there are only visible assets because the Government proofs must provide a reasonable certainty that all assets substantially affecting the income determination have been taken into account. The corresponding chaos caused by the redundant and additional circumstantial evidence instruction that a jury can only convict if the evidence excludes every reasonable hypothesis other than that of guilt was solved by a Supreme Court holding that the instruction is confusing and incorrect when the jury is properly instructed on the standards for reasonable doubt.

Willfulness.—A most significant gesture by the Supreme Court consists of the recognition that an inference of the specific tax evasion intent may be predicated upon a pattern of understated income over a period of years. The argument that willfulness in a net worth case is inferred by piling an inference upon an inference has been presented to the Supreme Court on several occasions and has yet to evoke comment by the Court. Whatever inferences are involved are explainable in terms of separate or parallel inferences from the evidence of an increase in visible assets rather than from a pyramiding of inferences from the understatement of income reflected by the net worth analysis.

A corollary criticism of taxpayers is the charge that the net worth method undermines the affirmative acts requirement of the willful attempted evasion offense. This criticism is premised primarily on the concept that the filing of a fraudulent tax return is not an affirmative act. Such a contention runs counter to an impressive line of authorities and fails to recognize that the filing of a false return as a necessary means of communicating the fraudulent self-assessment to the Internal Revenue Service possesses an affirmative quality comparable to such criminal acts as passing a counterfeit bill or a forged check. In addition, evidence of such affirmative badges of fraud as dealings in cash, destruction of books or records, or other evidence of concealment is found in some form in every prosecuted net worth case.

Proving Current Income.—The Supreme Court has destroyed the myth that net worth increases are assumed to be attributable to currently taxable income by requiring a sound evidentiary foundation consisting either of proof of a likely source of income or proof of a negation of all nontaxable receipts. An anomaly in net worth prosecutions results from the introduction of evidence of a fruitless search by the agents for nontaxable receipts to establish a basis for the conclusion by the jury that all reasonable inquiry has been made without discovery of any creditable evidence of substantial nontaxable receipts. Proving current income through a negation of all nontaxable receipts by such evidence differs from other criminal cases where there is some proof of an affirmative hypothesis which must be established even though the prosecution is also disproving an alternative negative hypothesis.

Burden of Proof.—The Supreme Court has cautiously adhered to the time-honored principle that the burden of proving its case beyond a reasonable doubt never shifts from the Government, but it warns taxpayers that they may have the burden of producing evidence after the Government has established a *prima facie* case. The Court, however, has also accepted the principle that the prosecution need not adduce positive evidence to support a negative averment the truth of which is fairly indicated by established circumstances and which if untrue could readily be disproved by the defendant. In the absence of leads, therefore, the Government is not required to negative every possible source of nontaxable income.

Corroboration of Admissions.—The Supreme Court has ruled that all elements vital to the Government's case must be established by independent evidence or by corroborated admissions or a combination of both. However, in addition to directly corroborating an admission pertaining to assets owned at the starting point of a net worth prosecution, the Court ruled that such an admission may be corroborated by incriminating evidence unrelated to the content of the admission. The Court has apparently resorted to the clumsy terminology of the corroboration rules in an effort to preserve the use of the net worth theory when it could more properly have said the existence of independent evidence of the *corpus delicti* removes the need for corroborative evidence. Within this elaborate, though perhaps illogical, framework a defendant is at least assured that he runs no risk of being convicted on his uncorroborated admissions alone.

Allocation of Income Between Taxable Years.—The major theoretical weakness in the net worth method is the possibility of an allocation of income to the wrong year caused by the implicit concept that assets are a measure of taxable income in the year in which they first come to light. A mis-allocation may be attributable either to assets becoming visible in a period other than the period of acquisition or to a time lag between the time the income was earned and the assets were acquired and the taxpayer's cash on hand is not known precisely. This weakness can be minimized by firm starting point proof and by a net worth analysis covering a series of prosecution years, but absolute certainty is impossible.

The Leads Obligation.—The principal development for taxpayers is the Supreme Court's newly formulated leads obligation whereby the Government must investigate relevant leads given by taxpayers which are inconsistent with guilt. This requirement, standing as the principal bulwark for the innocent, places the vast investigative resources of the Government at the disposal of the taxpayer as an aid in producing favorable evidence where it exists.

Accountants, Charts, and Summaries.—Accountants have assumed a

role of increasing importance in net worth prosecutions even though the pitfalls inherent in the method are primarily, if not solely, matters of criminal law within the province of attorneys. This importance derives from the increased use of charts and summaries, the use of accounting techniques and tax computations, and the added "expertise" which accountants add to a case when testifying as an expert witness. The denial of accounting services to an accused taxpayer rendered indigent by a jeopardy assessment and tax liens has produced a significant constitutional question of whether such a taxpayer's rights to counsel and a fair trial include accounting services in a net worth prosecution. The newly enacted provision allowing for an abatement of jeopardy assessments under certain circumstances constitutes a sufficient reason for concluding that additional legislation is not presently warranted.

Impact of Net Worth Litigation on Criminal Law.—Net worth litigation's most impressive contribution to criminal law is in raising the stature of circumstantial evidence. The historical distrust of circumstantial evidence has been overcome by the Supreme Court ruling that circumstantial evidence is no different from testimonial evidence when measured against the standard of guilt beyond a reasonable doubt. Consequently, there is no necessity for the rigid formula that circumstantial evidence must exclude every hypothesis except that of guilt.

In ruling that the Government must prove every element of the tax offense beyond a reasonable doubt though not a mathematical certainty, the Supreme Court has recognized that evidence is sufficient if it excludes actual disbelief of innocence and it need not exclude technical disbelief. This principle of general applicability is presently the basis for model jury instructions on reasonable doubt used in all federal criminal cases.

The final significant impact will be in the application of the corroboration rules. Henceforth, the corroboration rules are applicable to admissions in crimes where there is no tangible injury which can be isolated as a *corpus delicti* and corroboration is sufficient if it fortifies the truth of the admission without independently establishing the crime charged.

Evaluation and Prognosis.—The tracing of the telltale flow of a taxpayer's funds within the framework of the net worth method has established the method as a most efficient means of detecting otherwise undetectable offenses against the revenue. However, it is submitted that the net worth theory, with its safeguard elements, is also a just method for proving criminal tax fraud. This evaluation is premised upon the dual standard of adequately protecting against the erroneous conviction of the innocent while at the same time serving as probative evidence of the gist of the tax offenses entailing a willful understatement or non-reporting of taxable income. A panoramic view of the proper applica-

tion of net worth principles reveals that the rights of the guilty as well as the innocent taxpayer are adequately protected from the start to the finish of any net worth prosecution. The burden of proving the crime beyond a reasonable doubt always remains on the prosecution. The Government has the benefit of no illogical presumptions or assumptions and must establish each element of the tax offense by evidence from which the requisite inferences may be drawn. Finally, the increased awareness of the possible pitfalls and dangers by trial courts and the obligation of giving guarding instructions on the net worth method constitute a further safety valve against erroneous conviction.

In considering the fairness of the net worth theory, it must be recognized that there can be deviations in the practical application of the net worth principles. Hence, a perfunctory examination by the investigating agents resulting in the omission or a partisan treatment of net worth items constitutes a weakness in the application and not in the theory of the net worth method. The culling of cases that are potentially prejudicial to taxpayers, therefore, constitutes the *raison d'être* for the elaborate administrative processing of net worth cases by the Internal Revenue Service and the Department of Justice.

An increased tempo of net worth prosecutions is clearly indicated by the tremendous success the Government has enjoyed in the utilization of such proof. Since the broad principles are fairly well established, it is anticipated that the major development in the law of net worth will be in the areas of accounting consistency, technical adjustments, and allocation of income. Regardless of the particular challenges presented, the net worth theory will continue to stand as an equalizer insuring that all taxpayers, whether in a legitimate or an illegitimate business, carry their proper share of the tax load of our country.

SUMMARIES OF DISSERTATIONS
SUBMITTED FOR
THE DEGREE OF DOCTOR OF EDUCATION

AN EVALUATION OF THE EFFECTIVENESS OF SUPERVISED CORRESPONDENCE STUDY AT THE SECONDARY-SCHOOL LEVEL

by ZENA NUNZIA VALENZIANO*

Supervised correspondence study is a procedure employing courses which are prepared and evaluated by correspondence centers and supervised by local teachers or other persons designated by local school administrators. During the past three decades, this method of instruction has been used to enable thousands of high school students to study courses which are not available by regular classroom instruction.

THE PROBLEM

This is an evaluation of the effectiveness of supervised correspondence study in secondary school by students, who have used supervised correspondence study courses at the high school level, and by principals of high schools, which have used this method of instruction.

More specifically, this study is concerned with the answers to the following questions:

1. What purposes are served by supervised correspondence study in secondary schools?
2. What proportion of supervised correspondence study courses are completed?
3. What are the major reasons for noncompletion of these courses?
4. How does the effectiveness of supervised correspondence study compare with that of regular classroom instruction?
5. To what extent do courses studied by supervised correspondence study help prepare students for courses studied subsequently in the same subject field?
6. What are the advantages and disadvantages of this method of instruction?
7. How can the effectiveness of supervised correspondence study be increased?

Three hypotheses regarding opinions of students and principals toward the effectiveness of supervised correspondence study as a method of instruction at the secondary school level are tested. These hypotheses are:

1. In the opinion of principals of high schools which have used

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- supervised correspondence study, students generally find this method of instruction a satisfactory means of studying high school subjects.
2. Students who have used supervised correspondence study believe that the method compares favorably with regular classroom instruction when achievement is considered.
 3. Principals of high schools which have utilized supervised correspondence feel that this method of instruction compares favorably with regular classroom instruction in regard to achievement.

PROCEDURE

The literature was reviewed for information relevant to the questions raised and hypotheses tested. Other data for this study were obtained by means of two questionnaires which were mailed to students of regular high school ages, who were enrolled in high school supervised correspondence study courses during 1954-55, 1955-56, and 1956-57, and to principals of high schools which used this method of instruction for their regular students during that period.

Samples of the student population were selected randomly from the records of six correspondence centers and of the principal population from eight correspondence centers. Since records of the populations using courses for supervised correspondence study, as defined by this study, are not maintained by correspondence centers separately from others who use correspondence courses, it was not possible to ascertain the sizes of the total populations involved. Estimates of the maximum sample sizes of responses required were derived by means of the following formula:

$$n = \frac{x^2 \pi (1-\pi)}{E^2}$$

[n = sample size; x^2 = table chi square (one degree of freedom; π = proportion of the population making the response obtained either in the preliminary sampling or from findings of other studies; E = allowable error.]

Usable responses were received from 340 principals and 306 students. The statistical procedure used to analyze the data obtained from the respondents is the method of chi square, which was employed to test whether the difference between the actual and expected frequencies was a result of chance sampling variation. The technique was applied to test the null hypothesis or hypothesis of "no difference" of opinions expressed by students and principals. In addition, percentages were computed and estimates of population proportions or confidence limits were obtained. The responses were analyzed in a dichotomous fashion. An allowable error of plus or minus .05 and a level of significance of .05 were considered acceptable.

SUMMARY OF FINDINGS

Some of the most important findings of this study which are relevant to the questions raised and the hypotheses stated follow.

The unavailability of courses by resident instruction and the need to make up credit deficiencies resulting from failures and other factors were indicated most often by students and principals as reasons for using the method.

The student respondents completed 85 per cent of the correspondence courses begun; the confidence limits for the proportion of courses completed by the population was found to be .83-.88. The principals reported that 81 per cent of their students completed correspondence courses; the confidence limits of the proportion of completions in this population are .80-.82.

Forty-four per cent of the students who did not complete courses started indicated that the difficulty of the course when studying alone was one of the reasons for doing so; 45 per cent noted that too much time was required. Sixty per cent of the principals stated that students do not complete courses because too much effort and initiative are required; 35 per cent indicated inability to maintain interest.

That students can progress at their own speed and ability was indicated as an advantage by approximately three-fourths of the students and principals; dependence on the students themselves to do the work was given by three-fifths of the students and principals. Forty-four per cent of the students and 23 per cent of the principals felt that better study habits result from correspondence study.

More than half of the students and principals listed the lack of class discussion as a disadvantage of the method. That students miss the assistance which a regular teacher can give was indicated by 64 per cent of the principals and 32 per cent of the students. Thirty-nine per cent of the principals and 14 per cent of the students noted the amount of time required of students as a disadvantage. The suggestions regarding how supervisors and instructors could improve the effectiveness of supervised correspondence study were primarily concerned with the manner in which the method is administered.

Sixty-two per cent of the courses studied by correspondence were indicated by students as having prepared them *very well* or *well* for later courses in the same subject field at the high school level. Seventy-six per cent of the correspondence courses were thought by students to have prepared them *very well* or *well* for college courses in the same subject field. Sixty-nine per cent of all courses studied by correspondence which were followed by resident instruction in the same subject field in high school, college, and other educational institutions were thought by students to have helped to prepare them *very well* or *well* for the later courses.

In the opinion of the principals sampled, a high percentage of students find supervised correspondence study satisfactory. Seven per cent of the principals are of the opinion that students find the method *highly satisfactory*; 70 per cent, *satisfactory*; and 23 per cent, *unsatisfactory*.

In comparing the achievement resulting from supervised correspondence study and classroom instruction in general and with respect to courses studied by both methods in the same subject fields, significantly more than half of the students sampled are of the opinion that they learned as much or more by correspondence. However, significantly more than half of the principals are of the opinion that less achievement results from supervised correspondence study than from resident instruction. On the basis of these findings, the first and second assumptions stated above can be upheld; but the third is regarded as untenable.

CONCLUSIONS

The conclusions which follow are stated in terms of important findings presented above.

Broader Function of Supervised Correspondence Study.—Supervised correspondence study performs a useful role in the high school program. The responses of both students and principals concerning purposes served by this procedure indicate that were it not for supervised correspondence study, students, in many instances, would be denied the opportunity to pursue needed courses in many subject matter areas. In addition, this study found that the use of supervised correspondence as a means of supplementing the existing curriculum performs a valuable service to students and administrators. A large proportion of the student respondents are of the opinion that achievement resulting from supervised correspondence study is as high as or higher than that by resident instruction—an opinion supported by previous experimental findings.

In view of this evidence, it appears that this procedure can serve a broader function than that of merely adding to the number of courses available to students. This method of instruction has a greater potentiality for increasing the flexibility of the curriculum and facilitating curriculum revision, particularly in small schools which are forced by college-entrance requirements to offer a curriculum which, in many cases, meets the needs of only a few students. The use of supervised correspondence study for courses which are required by a few students will free available time, personnel, and facilities which can be utilized with greater flexibility for offerings by regular classroom instruction which meet the common needs of all students.

Implementation of this Procedure.—If supervised correspondence study is to make its maximum contribution to the high school program, especially during this period of teacher shortage in needed subject-matter

areas and in certain school localities, adequate administration of the program at the local-school level, needs to be provided. Some of the programs presently offered under the guise of supervised correspondence study are little more than provisions for studying correspondence courses without supervision, other than that provided during examinations. This situation is reflected in the responses of both students and principals which dealt with the part of the program which is under the auspices of the local school.

Attitude of Principals toward Supervised Correspondence Study.—Many of the objections to supervised correspondence study and recommendations for its improvement offered by students and principals are directed at the manner in which the method is applied or administered at the local schools. As revealed by the findings of this study, many of the correspondence study programs are being administered by principals who believe that the method is less effective than classroom instruction. For these principals, correspondence study is only a stop-gap measure. As such, it is not likely to be given much, if any, consideration in any long range planning for curriculum revision, in-service training of teachers, or building programs. Until this procedure is considered an integral and effective part of the total school program by administrators, it is doubtful that existing inadequacies of supervision, guidance, and facilities will be given much attention. Furthermore, unless local school personnel involved are favorably disposed to this method of instruction, objective in their estimation of its effectiveness, and aware of the manner in which it could be employed to advantage, the method is not likely to be used as extensively and effectively as it could be used.

Lack of Objective Evidence Regarding the Effectiveness of this Procedure.—The students who have actually studied by supervised correspondence study show less resistance to the method than do the administrators of these programs. Principals, through training and experience, probably are more sensitive to the values of regular classroom instruction than to those of supervised correspondence study. This may influence their judgment regarding the effectiveness of a method of instruction which departs somewhat from traditional methods. The lack of objective evidence regarding achievement resulting from this procedure as compared to regular classroom instruction may also be a deterrent to greater acceptance of the method by administrators and supervisors.

Importance of Adequate Guidance to a Correspondence Study Program.—The findings of this study regarding reasons for students not pursuing courses to completion, which are related to the difficulty of courses, inability of students to maintain interest, lack of effort and initiative on the part of students, and the unwillingness of students to devote the time required, suggest unwise selection of courses. Lack of proper guidance at the time when choice of courses to be studied by this

method is made may be an important factor influencing the noncompletion of courses.

RECOMMENDATIONS

The following recommendations are offered on the basis of the findings of this study:

1. To acquaint prospective and in-service teachers and administrators with the nature and application of supervised correspondence study, appropriate professional courses in Education, on both undergraduate and graduate levels, should include units on the subject. Workshops, on a local or state level, should be included in the in-service training of teachers and administrators of schools which plan to use or are currently using the method.

2. To meet the need for a textbook or manual which deals with this method of instruction, financial support should be sought from one of the foundations which are concerning themselves with the shortage of teachers.

3. Evaluations of supervised correspondence study programs in local schools should be conducted frequently and periodically. Such evaluations should involve the staff of the correspondence centers as well as the students, principals, and supervisors of correspondence study.

4. Close liaison between the staff of correspondence centers and that of the local schools using supervised correspondence study materials provided by the centers is recommended in order to facilitate the conduct of these programs.

5. To increase the amount of supervision provided, supervised correspondence study could be substituted for classroom instruction serving small groups of students, thus freeing teacher-time and energy for supervision of the total correspondence program.

6. Correspondence centers should reappraise periodically the procedure followed in the processing of assignments submitted to them for evaluation in an effort to eliminate the dissatisfaction in this regard expressed by students and principals.

7. Teachers seeking enrichment materials for individual students should investigate correspondence courses as a possible source.

FURTHER RESEARCH NEEDED

1. There is a need for objective evidence of the success or failure of correspondence students in college as compared with college students who have not used supervised correspondence study in high school.

2. There is a need for controlled studies by local school administrators which seek to answer the question of how students who study

courses by supervised correspondence study compare on achievement tests with those who do so by resident instruction.

3. Studies which attempt to measure the extent of supervision and counseling afforded students who complete correspondence courses and those who do not are needed to provide evidence concerning whether or not there is a relationship between the amount of effort students exert on their courses and the extent of supervision and counseling provided.

4. There is need for study of the resistance toward supervised correspondence study on the part of the principals. Investigation of this factor might bring forth valuable evidence concerning aspects of the method which need to be improved.

CONCLUDING STATEMENT

This study has thrown additional light upon the worth of supervised correspondence study as a method of instruction, and it is hoped that the findings and conclusions will be useful to all those interested in this method of study. However, it is evident that many questions concerning the effectiveness of supervised correspondence study remain unanswered. Some of the topics needing additional investigation have been stated above. It is hoped that other researchers will respond to this challenge.

A SURVEY OF PROGRAMS OF CLINICAL PASTORAL EDUCATION IN THE PROTESTANT DENOMINATIONS OF THE UNITED STATES AS A PREPARATION FOR PASTORAL COUNSELING

by KENNETH STANLEY CROFOOT*

The program of clinical pastoral education formerly was something added to, rather than an integral part of, the education received by one preparing for the pastoral ministry. Today it is recognized as a most influential part of theological education. Clinical pastoral education gives a student preparing for the pastoral ministry an opportunity to learn by experimental processes the dynamics of interpersonal relations, and to discover in actual situations how spiritual help may be given most effectively to relieve stress of various kinds, whether it be acute illness, deep perplexity, or actual mental illness.

The need for a study of this kind is recognized by the frequent reference in the journals of pastoral ministry to the need for more objective evaluation of the aims and procedures of clinical training. Also, as more training centers are established in various welfare institutions, need arises for such studies as this, so that the essential factors may be incorporated into the training programs.

The purpose of this study is to define clinical pastoral education, ascertain its place in theological education, and present a program of clinical training that will prepare theological students for pastoral work.

PLAN OF PROCEDURE

Ten of the larger clinical training centers were visited and observed, and semi-structured interviews were conducted with twenty directors and supervisors of clinical training programs. Their answers to the interview questions have been incorporated into this study, some by summary, others by direct quotation. Thorough investigation of the literature of the movement for a number of years has been a part of the investigation. As a result, this study presents, first, a short history of clinical pastoral education, and a description of the commonly accepted techniques and procedures used in the clinical training centers that are recognized as the best. A final chapter outlines a suggested program for clinical pastoral education. Several appendices bring together certain essential items of information that have affected clinical pastoral education during its rapid development of the past few years.

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HISTORY OF CLINICAL PASTORAL EDUCATION

Clinical pastoral education began as a result of the recognition of a need for it by pioneers in the field. As a result of his own experience with mental illness, the Reverend Anton Boisen was led to experiment with clinical training in a mental hospital. Dr. Richard Cabot, realizing the benefit of spiritual help during stress or illness, threw some of his tremendous energy and talents into the program of clinical training. Another physician, Dr. William S. Keller, urged that theological students have some clinical experience as a part of their seminary training. Using a great deal of his own time and funds, he traveled widely, urging the program which he felt would be vital to ministers.

Other programs have developed as the needs have been recognized, until finally the value of clinical experience as a part of the curriculum for theological students is widely accepted, at least in the United States. It is now called clinical pastoral education instead of clinical pastoral training in recognition of the fact that it is now accepted as an integral part of the theological education. In addition to those training centers operating under the auspices of either of the two accrediting associations, The Council for Clinical Training, Inc. and The Institute of Pastoral Care, a number of independent training centers have been developed and are operating efficiently.

PHILOSOPHY AND OBJECTIVES OF CLINICAL PASTORAL EDUCATION

The philosophy of clinical pastoral education is based on the assumption that a pastor, by study and not merely by chance, can acquire skill in communicating an assurance of the reality of a Supreme Being and of His interest in the problems of the individual man. Admittedly, the acquisition of such skill requires, first, that the counselor have a self-understanding far beyond that of the average person in everyday life. Second, it requires that he have a superior understanding of the working of the human mind and also of the factors involved in personality development. Leaders in the clinical pastoral education movement have especially stressed the importance of both of these requirements.

Students who have received clinical training, consider self-understanding one of the most valuable results. While it is true that, before clinical training, many students do not recognize their lack of self-understanding, the program is such that this realization develops somewhat automatically as the students' group training progresses. Confronted with certain traumatic experiences of life and death and forced to react to them and to help others accept and react to them, the student develops a philosophy of life and death that is satisfactory, not only to himself but to those with whom he is working.

The churches are looking for pastors who can help their members

with traumatic experiences that come as a result of living in a perplexing and frustrating world. Clinical pastoral education has developed such pastors. Many theological seminaries are offering this education in the preparation of those who will work in the pastoral ministry. "Bedside theology" or theology that works in time of stress is the only kind worthy of the name. Theology that is proved under clinical conditions is a theology that is alive to the problems of the day. Welfare institutions of various kinds, too, have found that spiritual help from properly trained chaplains is valuable to their patients or inmates. Thus they help sponsor and finance clinical training programs.

The philosophy of clinical training has developed and the objectives have become more and more clearly outlined as the program has taken shape under the initiative of its originators and through experience gained from trial and error.

TECHNIQUES AND PROCEDURES USED IN CLINICAL PASTORAL EDUCATION

Clinical pastoral education has tried to make use of the newer methods of teaching that have been developed in the past few years. In fact, there are probably few other areas of education that use the knowledge of group dynamics as completely and effectively as clinical pastoral education does. One of the most widely used techniques, known as the *verbatimim*, is a method of carefully examining the dynamics of the interpersonal relationships of the student chaplain and the patient or inmate. The interaction of the students with each other and with the supervisor are also carefully observed, both in the group seminars and in the interviews which the supervisor has with each student at least once a week. Lectures, carefully planned as to content and sequence, are given in order to help the student understand more of what is happening during this period of clinical training. As a result of a very careful evaluation of the results of all this interaction, the student gains a greatly improved self-understanding, as well as an ability to assist the patient or inmate in his own self-understanding. These various techniques and procedures, including lectures by the professional staff, all provide an opportunity for the student preparing for the pastoral ministry to gain a much greater understanding, both of himself and of human nature, particularly under stress situations.

A REVIEW OF EVALUATION STUDIES ON CLINICAL PASTORAL EDUCATION

To date, only two comprehensive evaluation studies have been made of clinical pastoral education. They both agree essentially on the results of clinical training. The most important results lie in the area of inter-

personal relationships. In this area great progress had been made. Self-insight and personal growth are also the results of clinical training. One of the most important, however, is a definite growth in the understanding of the ministerial role. A successful minister undoubtedly learns what his role is sooner or later in the community and church. But clinical training accelerates this understanding and deepens its meaning to the student in a way that, according to the present surveys, could not be done within the walls of the seminary alone.

TYPICAL PROGRAMS IN OPERATION AT PRESENT

While there is a pattern emerging among the clinical training centers as to what constitutes an effective and acceptable training program, there is still much variety as to length of time spent on the various aspects of the schedule. The subjects in the series of lectures vary, as does the emphasis. Some training centers emphasize, above almost everything else, the importance of the students' self-understanding, and the lectures, case studies, and discussion are geared to this understanding. Other centers emphasize preparation for the pastoral ministry, and they present lectures and take up specific case studies with that objective in mind.

While it is true that a pattern is emerging that can be seen clearly even in the independent centers, there are still a great many areas where the individual director or supervisor follows his own conviction while still accepting the over-all objective of clinical pastoral education.

A SUGGESTED PROGRAM OF CLINICAL PASTORAL EDUCATION

A satisfactory clinical training program begins with a skilled, patient supervisor. By means of various techniques he directs a student in a clinical training setting through various processes designed eventually to develop in the student the desired attitudes, self-understanding, and skill. The supervisor may work along with his students, never more than six, or he may work in a large center where scores of students are gathered. The supervisor is, however, the key man around whom the training program revolves.

Some centers are furnished with the barest minimum of physical equipment. Others have complete facilities, with everything one could desire. If there are enough seminar rooms for each supervisor to have one for his group, the groups can gather whenever they wish for their discussions. For the gathering of the larger groups for lectures and other discussion periods, the institutional chapel is often used. The type of institution in which the center is located frequently controls the type of facilities which may be available for the students. Another item

of great importance is that the students be granted complete freedom in their work.

The students work together as a group, visiting patients or inmates, and discussing interviews that have been written in a verbatim; and in the group seminar, problems of other students are presented and profitable discussion given to them, perhaps with a bit of role-playing to illustrate a possible solution. Lectures are given by well-qualified professional people who are familiar with the program of clinical pastoral training and who are willing thereby to help train future parish ministers. A careful and objective continuing evaluation is encouraged, not only of each student, but of the training program as a whole. This follow-up program is designed to meet the needs of the students and also those of the future parishioners of these students.

PRACTICES OF SYSTEM-WIDE ENGLISH SUPERVISORS IN THE PUBLIC SECONDARY SCHOOLS OF LARGE CITIES: AN APPRAISAL

by SUE McGLAUGHAN BRETT*

THE PROBLEM

This study attempts to appraise the current practices of system-wide supervisors of English in the secondary schools of cities with population of 100,000 or more. More particularly it attempts to discover the conditions under which supervisors of English work, their philosophies and objectives, and their practices and procedures. It attempts also to identify the practices which appear to be most promising.

PROCEDURE

To establish criteria for appraisal of the findings, the recent textbooks on supervision were searched for the theoretical program of supervision. As background for the study, three previous surveys of supervisory practice were reviewed.

Based principally upon the textbook recommendations, a questionnaire on the practices, procedures, and working conditions of supervisors of English was prepared. It was sent to each of the seventy-two large cities which had a system-wide officer with the responsibility for supervision of English, if the officer had indicated willingness to receive it. Fifty-five of the papers returned were suitable for use in this study.

REVIEW OF THE LITERATURE

Diligent research discovered little useful literature in addition to three previous surveys of supervisory practice and the recent textbooks on supervision.

The previous surveys contributed as background the fact that the democratic philosophy of supervision was generally favored and practiced in the early 1930's. Classroom visitation, the follow-up conference, and teacher rating, however, had for so long been associated with the old autocratic supervision that they posed a problem of adjustment under the newer philosophy. The problem persisted through 1945, even though some progress had been made in recasting the supervisor as a leader and helper rather than inspector. The technique of demonstration teaching

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was not used in the early thirties, but was receiving more attention in 1945. The use of test scores for evaluation of their work was distrusted by both supervisors and teachers in the early thirties, but by 1945 test scores had come to be a major consideration in evaluating both curriculum and instruction.

The theoretical program of supervision found in the recent textbook literature presents practices and procedures consistent with the democratic philosophy of supervision. Supervision is viewed as a social process, or as a human relations activity, and the formal group process is advanced as the logical cooperative problem-solving method. The fundamental practices, such as classroom visiting, are taught with a democratic approach. Demonstration teaching is a recommended technique, and testing is highly favored as an evaluation technique.

FINDINGS

Working Conditions of Supervisors of English

The working conditions of the supervisors of English as revealed in the fifty questionnaires returned by supervisors and five by assistant superintendents appear to be the following.

The organization for supervision still has developed no preferred pattern, each city establishing its own form. Duties of supervisors vary widely, and such designations as consultant, coordinator, and director are used in many cities rather than *supervisor*, presumably because of the autocratic connotation of the older title. *Supervisor*, however, is still very generally used.

Seventy-two of the 106 large cities use system-wide supervisors of English on the secondary level who rank below assistant superintendent. Thirty-seven of these are special supervisors of English; the others are general supervisors of all subjects, including English.

The scope of responsibility varies widely among the English supervisors, some serving only the senior high schools and others serving all levels from kindergarten through grade 12. The numbers of teachers which they supervise range from 50 to 1500, the median number supervised by all respondents, special and general supervisors grouped together, being 300.

Though the status of the supervisor of English also varies from city to city, the majority of respondents find it satisfactory in the main. More supervisors who work under assistant superintendents find their status satisfactory than those who are assigned to directors, or to any officers of lower rank than assistant superintendent.

Supervisory responsibilities in more than half of the systems responding are shared, or the supervisor's duties are overlapped with the duties of others. This situation is, however, usually satisfactory, though the

sharing is most frequently with department heads in the schools, who have little opportunity to supervise, and accordingly can take little responsibility.

Though the median number of teachers served is 300, over 70 per cent of the supervisors have no assistants, and find the need for them pressing. The administrative practice of releasing classroom teachers to work on special supervisory activities, usually curriculum, is common and regarded as profitable, but too limited in most cities.

Most supervisors receive an allowance above their salaries for travel to and from schools within the system, for transportation to and from out-of-the-city professional meetings, and to visit schools in other cities. All are granted leave with pay to attend professional meetings.

Annual leave for supervisors varies from 2 weeks to over 2 months, the greatest number, though not a majority, of respondents having 4 weeks in the summer.

The offices of supervisors of English are usually satisfactory in the main, though many need more space and privacy for conferences and for work. There is urgent need in most offices, however, for clerks and stenographers.

The weight of supervisory responsibilities is greatly increased in most of the large cities by the active teacher turnover, by the assignment of English classes to teachers of other subject fields, and by new pupil needs brought by socio-economic changes in the community. The difficult pupil needs are most frequently those arising from low ability and lack of cultural background, from foreign background, and from the transiency of the population.

The heavy work-load of English teachers appears to have a frustrating effect upon supervision. The standard pupil-load in most of the cities responding is 5 classes of 150-175 pupils, and extra assignments. The load most often recommended by English supervisors is 4 classes of 25 each, plus extra duties; by general supervisors, 5 classes of 20 to 30 pupils each, and extra duties.

Most cities give English teachers compensatory time for extra duties, but few pay all English teachers for their extracurricular hours, and fewer assign English teachers lighter loads to compensate for heavy homework.

English teacher morale in most cities is considered normal.

More than half of the supervisors have made major curriculum adjustments because of major population changes, and over two-thirds have been searching for new teaching materials to meet the new needs brought by these changes.

In support of the supervisory program in English, most cities provide substitutes for teachers to attend professional meetings, and more than half of those reporting also provide funds for specialists as speakers, for

consultants, and for directors of workshops. They provide also substitutes for teachers to visit other classrooms, but few pay the full tuition and expenses of teachers attending holiday or vacation workshops.

The handicaps to supervisors of English most frequently indicated as greatest are insufficient favorable time for teachers to participate actively in the program and insufficient staff of supervisors. Other serious handicaps are lack of adequate clerical and stenographic assistance, disproportionate amount of time required by the large number of new teachers, insufficient financial support of the program, indefiniteness of responsibility or overlapping responsibilities, lack of satisfactory office space and equipment, and substandard qualifications of many new teachers.

PRACTICES AND PROCEDURES EMPLOYED BY SUPERVISORS OF ENGLISH

Establishing Acceptability

Practices which aid the supervisor in gaining the acceptance necessary for leadership, apart from those of his in-service education program, are (1) those which qualify him as an able resource person in matters pertaining to English teachers, and (2) those which contribute to maintaining a successful staff of teachers. Such practices include the keeping of personnel files containing the current assignments of teachers, a directory of teachers, and notes on probationary and other teachers whose service is under question. About 80 per cent of the respondents keep such files. About 50 per cent also keep records of visits and conferences with all teachers, and 40 per cent the personal and professional records of all. Many others have access to such files in the central personnel office. Keeping full records of doubtful teachers is regarded as unusually effective by about 38 per cent of the supervisors. The other practices are marked unusually effective less frequently.

Eighty-four per cent of the respondents keep themselves well informed concerning the special abilities and weaknesses of English teachers.

Rating teachers is the responsibility of only 10 English supervisors and 10 general supervisors responding. Three consider the practice unusually effective. Only 9 English supervisors and 11 general supervisors assist teachers with self-rating, and 4 consider the practice unusually effective.

As aids in maintaining a satisfactory teaching staff, the supervisors make their greatest contributions to the teachers already in service. All give special help to probationary teachers, and almost all consult with the principal about those who are unsatisfactory. Forty per cent find this practice unusually effective.

To assist with the employment of new teachers, the majority of supervisors interview and recommend candidates, but only 50 per cent consider interviewing unusually effective. The reason may be the shortage of

teachers. Thirteen respondents sit on oral examining boards, and 6 find the practice unusually effective. Only 3 prepare and evaluate written examinations to be administered to candidates.

Morale building services of supervisors of English are extensive and general. Building confidence in teachers by looking always for strengths, praising sincerely, and criticizing justly with intention of being helpful is the practice of almost all and is found to be unusually effective by 58 per cent of the respondents. The second in rank of effectiveness is helping to develop on the part of laymen a sympathetic understanding of the English teachers' problem. The supervisors are unable to contribute very much to the protection of teachers' time against waste, or to teachers' maintaining satisfactory community relationships.

Establishing the In-service Education Program

The approach to the establishment and administration of the in-service education program is almost unanimously that of cooperative planning. Fifty-eight per cent of the respondents find it unusually effective.

The most generally used procedure for involving all teachers in the planning is keeping them informed through city-wide meetings or bulletins. This practice ranks second to the cooperative approach in unusual effectiveness, and choosing a small number of teachers to serve as a planning committee ranks a close third. The department heads very frequently constitute the small group chosen. Inviting all teachers to make suggestions is a common practice, and is considered unusually effective in about 25 per cent of the cities using it.

In developing the in-service education plan, it is general practice to proceed in the light of the old plan. Very few organize the program by formal steps, though doubtless all the steps are considered informally. Of two approaches suggested—(1) designing the program to meet the needs which teachers find critical and introducing other activities as feasible, and (2) organizing the program on a broad theme and dealing with teachers' pressing needs in small groups or individually—neither is preferred over the other. Both are very generally used.

Evaluation of the in-service education program is more often informal than formal, though formal evaluation procedures involving all teachers are found to be unusually effective more frequently than the informal methods. A check list of behavioral outcomes, however, is little used, and evaluation by special committees is seldom done.

The approach in administering the program is also cooperative, a committee of representatives from all faculty groups—usually department heads—serving in an advisory capacity to the supervisor.

Time for meetings is a difficult problem generally. Most meetings of all kinds are held in the afternoon after school. About a third of the

supervisors meet committees during the school day, but only 5 mark the practice unusually effective.

Twenty-eight per cent of the cities require teachers to attend the supervisors' meetings. The others practice the permissiveness of the democratic philosophy.

Improving the Curriculum

To determine the changes needed in curriculum, the chief source of information is the English teachers. After these, the principals and others are consulted.

In organizing for revision, the usual practice is to establish a system-wide committee to make the plans, which are submitted to the English faculties for approval.

Informal evaluation of curriculum changes is usually considered adequate.

Revising the curriculum periodically and revising continually are both general practices.

Improving Teaching Conditions

For the improvement of teaching conditions, most attention is given to procurement of more suitable teaching materials. However, the practice most frequently marked unusually effective is seizing every opportunity to give educators and laymen a more realistic conception of the importance and the difficulties of teaching English well. Promotion of library improvement is rated high in effectiveness also, and supporting teacher welfare movements follows it closely.

Encouraging the Growth of English Teachers

All practices generally recommended for the encouragement of teacher growth are used by supervisors of English, and in large number of cases are reported to be unusually effective. Those used least are those which are not easily arranged for and sometimes impossible to provide: all-day conferences on English teaching, pre-school workshops, and general fellowship meetings. The supervisors have added many practices to those listed in the questionnaire and have given strong evidence that the growth of English teachers is one of their major objectives.

Current Use of Special Techniques

Classroom visitation and follow-up conferences.—Supervisors rate classroom visits as valuable. The supervisor as a rule has no regular schedule for visiting, but goes where he is needed as often as he can, attempting always to keep the teacher and class at ease when he is present. He does not write notes in the classroom, but he does make notes

later for his files. He holds conferences with probationary teachers after visits, in their own buildings when possible, but he usually cannot hold a conference with every teacher visited.

Demonstrations.—Demonstrations are being requested by teachers and provided by the supervisors. They are usually held during the school day, and attendance is rarely compulsory.

Supervisory bulletins.—Both the newsletter and the instructional type of bulletin are used by about half of the respondents. These supervisors generally regard them as valuable.

The formal group process.—The formal group process is used very generally in workshops, large conferences, curriculum revision meetings, and meetings for program planning. It is found to be valuable by 48 per cent of the respondents, and very valuable by 18 per cent.

PROMISING PRACTICES

According to the data gathered in this study, the following practices appear to be promising:

1. Interpreting the English program to the public for better understanding of what the program is, its objectives, and its problems.
2. Action of the supervisors for the reduction of the heavy loads of English teachers.
3. The cooperative attitudes and methods employed by the supervisors.
4. Involvement of all teachers in the in-service education program.
5. Keeping the curriculum under continual evaluation by centering study upon some part of it each year.
6. Use of in-school time for supervisors' committee meetings.
7. Use of teachers released from the classroom for special in-service education activities.
8. Periodic vacation-time workshops with pay for the teachers attending.
9. A one-semester orientation program for new teachers, for which professional credit is given.
10. Experimentation with supervision by television.
11. Cooperation with teacher training schools and colleges in the improvement of their programs.

CONCLUDING STATEMENT

On the basis of the evidence compiled in this survey, a just appraisal of the practices and procedures employed in system-wide supervision of secondary school English in the large cities appears to be that the supervisors, laboring under serious handicaps, are earnestly endeavoring to carry on the program of cooperative democratic supervision which is presented to them as a model by the leaders in educational thought.

GROUP APPROACHES TO STUDENT PERSONNEL SERVICES IN HIGHER EDUCATION

by VIRGINIA RANDOLPH KIRKBRIDE *

THE PROBLEM

The use of the group approach in the personnel services of colleges and universities has been given increasing recognition in educational programs in recent years. It is reasonable to assume that both necessity and desirability have contributed to this growth in use. The necessity has arisen from large increases in college enrollments and insufficient personnel for service on an individual basis. Desirability results from a growing awareness of the importance of the development of personality, attitudes, and behavior along with professional skills as essential parts of an educational program designed to meet present day needs.

It has been demonstrated through experience that group approaches in student personnel services can be used advantageously to reduce the need for individual counseling, thus saving time and personnel. Economy and necessity alone would not be sound justifications for expansion in the use of group approaches in personnel services. Effectiveness in meeting the needs of students must be the determining factor in their use. General effectiveness of group approach methods has been demonstrated, but adequate studies are needed to determine the application and relative effectiveness of specific techniques and the types of situations in which specific approaches can be used most effectively.

The group approach is a method of stimulating learning within assembled groups through accepted procedures in the areas of choice and adjustment in collegiate situations.

The primary objectives of this study are fourfold.

1. To learn the prevalence of the use of various types of group practices in student personnel services in institutions of higher education.
2. To ascertain the types of situations in which group approaches are being used.
3. To determine specific factors related to the effectiveness of particular group techniques.
4. To explore and define, if possible, the circumstances in which particular group approaches may be used effectively in specific personnel services. Incidental to these primary objectives of the study, certain other information, such as length of time specific practices have been in use, estimated values of effectiveness, and recognition of personnel pro-

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grams employing group techniques through giving academic credit, was sought.

The study was in the form of a nation-wide survey through questionnaires. Twelve group approaches were chosen for study: Audio-Visual Aids, Case Study, Group Conference, Group Discussion, Group Therapy, Leadership Training Course, Lecture, Multiple Counseling, Occupations Course, Orientation Course, Panel Discussion, and Role-playing. The student personnel services in which the use of group approach methods seemed most likely were selected for study: Admissions Service, Central Counseling Center, Faculty Advisory Services, Financial Aid and Student Employment, Health Services, Job Placement Service, Orientation of New Students, Regulation of Student Conduct, Supervision of Living Arrangements, and Supervision of Student Activities. Certain variable factors, such as size of enrollment, sex, region, control, and locale, were studied in relation to the extensiveness of the use of group approach methods. In addition to these variables, other factors, such as size of group, qualifications of leaders, physical facilities, specific advantages and disadvantages were included in the questionnaire for consideration as to their possible relationship to the effectiveness of the several approaches.

PROCEDURES

A pilot study was made to determine the adequacy and clarity of the questionnaire before it was generally distributed.

The final questionnaire was sent to three hundred sixteen co-educational institutions listed in the *Education Directory 1957-58 Part 3, Higher Education*, selected by application of statistical random sampling technique to the total listing of seven hundred eight such institutions, using the Table of Random Numbers found in Edward's, *Experimental Design in Psychological Research*. The sampling was done so as to include relative percentages of the total schools in each of the six regional accrediting associations. The questionnaire in each instance was sent to the Dean of Students, Dean of Men, or Dean of Women, if shown in the *Directory*, otherwise it was sent to the president with the request that he designate an appropriate person to fill it out.

Of the three hundred sixteen questionnaires sent out, one hundred sixty-three were returned. Of those returned, ten were incomplete and unusable, hence the study was based on the one hundred fifty-three usable questionnaires.

The data from the questionnaires were tabulated using International Business Machines.

REVIEW OF LITERATURE

In reviewing the literature on the use of group approach methods in student personnel services at the college level, one is impressed nega-

tively rather than positively by its quantity and quality. Surprisingly little has been written, and this primarily within the past decade. For the most part, the writings are theoretical in that they express the individual author's opinions of what can and should be done in the area and do not enlighten the reader as to the actualities of practice in the field. Within the foregoing limitations, the literature logically falls into two main categories: (1) generalizations based on opinion rather than research regarding development, purpose, value, use, and effectiveness of group approach methods; (2) description, discussion, and comment on specific group approach techniques and uses. The latter category includes reports of some experiments with specific group approaches in particular colleges, but these reported experiments are limited in scope and character and do not provide an adequate basis for comparisons or conclusions. Taken as a whole, the literature on the subject contributes little, if anything, to the present study other than to emphasize the need for further research concerning the use and effectiveness of group approach methods in college personnel service programs.

FINDINGS

The main findings of the study follow.

1. In all schools from which questionnaire responses were received, one or more group approach techniques are being used in student personnel services.
2. The general use of group approach methods in personnel services is steadily increasing. In the three-year period, 1956 to the time of this study, the number of instances, reported in this study, in which the use of group approach techniques has been started is eighty-two. In the six-year period immediately preceding, the number of instances in which the use of group approach methods was started is one hundred eighteen. Total use begun since 1950 is two hundred as compared with one hundred fifty-one in all previous years.
3. Group approach techniques in all student personnel services are used to the greatest extent in colleges and universities with enrollments of 5,000 or more students.
4. More group approach methods are in use in colleges and universities which have enrollments with pluralities of female students.
5. Schools belonging to the Western Accrediting Association show the greatest mean use of group approach methods in student personnel services among the six regional associations. Schools belonging to the New England Association use the group approach less frequently than those in the other five associations.
6. Private, church-related schools make more extensive use of group approach methods in student personnel services than schools under state, private nondenominational, or other control.

7. The three group approaches reported as "relied upon most" in all student personnel services are the group discussion, group conference, and orientation course.

8. The specific personnel services in which group approaches are reported as "relied upon most" are Orientation of New Students, Central Counseling Center, and Supervision of Student Activities.

9. Those reporting were offered ten options as to advantages of the group approaches. Three of these had as a central concept the exchange of ideas ("exchange of ideas provides valuable social experience," "provides opportunities to exchange ideas with peers of professional authority," and "exchange of ideas stimulates thinking and understanding.") While no one of these options took first position, the reports in the three combined establish "exchange of ideas" as by far the greatest advantage in the use of group approaches. The saving of time is also a major advantage in the use of group approach techniques.

10. Disadvantages found in the use of group approach methods were that it may not uncover real problems and that it does not take care of specific problems.

11. In its relationship to effectiveness of group approach methods, group composition is considered under three broad headings: structure, group composition is considered under three broad headings: structure, procedures, and membership. Group structure, whether formal or informal, has little relationship to effectiveness. Procedures have far more significance, and those which are democratic or semi-democratic are highly preferable to those which are authoritarian or semi-authoritarian. Membership also has a direct relationship to effectiveness. Groups with mixed membership as to age and sex are more satisfactory than homogeneous groups. Individuals with common or similar problems also contribute to group strength.

12. In the greatest number of instances as evidenced by responses to the questionnaires, good background of information and knowledge pertinent to the problem is the primary qualification of a group leader. Effective leadership ability and ability to explain and/or persuade are only slightly less important.

13. Undoubtedly the type of instructional material used and the size of the group have a bearing upon effectiveness, but it was not possible to make a general finding in these areas other than that the relationship of these two factors varies and is largely dependent upon the particular group approach used.

14. Physical comfort is shown to have a direct relationship to effectiveness, but the degree to which it affects actual results could not be measured.

15. Group approach methods are generally regarded as aids or ad-

juncts to individual counseling, rather than a substitute for it. The reports indicate that they are used either as a preliminary, or follow-up technique, or used concurrently with individual counseling in the great majority of instances.

16. In evaluating general effectiveness, giving consideration to the various factors which have direct or indirect relationship, group methods are considered to be satisfactory in most instances.

CONCLUSIONS

1. The findings relative to the size of enrollment and the saving of time in relation to the extensiveness of use and advantages of group approach methods, point to the conclusion that economy of time is a factor affecting use. However, from the strong emphasis placed upon the specific advantages to be gained from the exchange of ideas, it can be concluded that the real merit of group approach techniques has an even greater bearing upon extensiveness of their use than does the factor of economy.

2. Group approach methods have serious disadvantages in that they may not uncover real problems and that they do not take care of specific problems. Undoubtedly, these disadvantageous factors affect both the extensiveness and the effectiveness in the use of group approach methods, but it was impossible to determine to what degree. While this finding does not support a definite conclusion that greater skill in group leadership can at least partially alleviate these disadvantages, it points to this possibility.

3. Membership composition and procedure have a much greater bearing upon the effectiveness of group approach techniques than does organizational structure.

4. The use of group approach methods is not a satisfactory substitute for individual counseling; it is rather an aid or adjunct to it.

5. The findings support the conclusion that group approach methods are used more extensively with female than with male students. Data available in this study do not lead to any definite conclusion as to why this is true.

6. Findings point to the fact that group approach techniques are used more extensively in private, church-related schools than in other colleges and universities. It cannot be concluded from this study why this fact is true.

7. From the cumulative findings, it may be reasonably concluded that through experience and research into the strengths and weaknesses of group approach techniques, they can be refined and improved so that they will become even more useful and effective in student personnel services.

RECOMMENDATIONS

Recommendations, based on findings of the study, follow.

1. Expand the use of group approach techniques in personnel services in smaller schools to strengthen individual counseling services.

2. Consider more extensive use of group approach methods in state, private, nondenominational, and other schools as a means of implementing other services.

3. Place greater emphasis upon professional training to develop the skills of group leaders.

4. Give greater academic recognition to situations, such as orientation, leadership training, and occupation courses, in which group approach methods are used in student personnel services as a stimulus to use and effectiveness.

5. Avoid the use of group approach methods as a substitute for individual counseling.

6. Establish more specific criteria for evaluation of group approach techniques in student personnel services.

RECOMMENDATIONS FOR FURTHER RESEARCH

1. This study has presented evidence that group approach methods may not uncover the real problems and that they do not take care of specific problems. Further research is needed to determine whether these weaknesses lie in group approach techniques themselves or are attributable to their application, to the end that improvements may be made and that group approach methods may be more effective in these specific areas.

2. This study has disclosed that group approach methods are used to a greater extent among women than among men. Further research might be helpful in determining specific factors which affect this use pattern so that group approach techniques may be equally as desirable and effective with male and female students.

3. The findings of this study reveal that both merit and economy have a direct relationship upon the extensiveness of use of group approach techniques. The findings also reveal that these techniques are used more extensively in private church-related schools and colleges than in others. Further study is needed to determine why this is true and if the factors affecting it are such as to preclude use equal in extent and effectiveness in state, private nondenominational, and other schools.

4. This study revealed that less emphasis is placed upon professional training and experience of group leaders than upon other qualifications, such as background of knowledge and information pertinent to the problem and ability to persuade or convince. Further research is recommended to determine more specifically the relationship of professional training and experience to the effectiveness of group approach methods

and to determine whether or not the quality of professional training and experience available is a factor in this relationship.

5. Finally, it is recommended that research be made to ascertain student evaluation of specific group approach methods to be used in conjunction with faculty and administrative evaluations as a more accurate measure of the effectiveness of their use.

CONCLUDING STATEMENT

This study has provided a nation-wide survey of the extensiveness of use of twelve selected group approaches in ten specific student personnel services and of the situations in which they are being used. It has also led to the determination of the relative extent to which certain factors relate to the effectiveness of group approach methods in these services and a general evaluation of the techniques by those practicing them. It is hoped that the study and the resultant findings will serve as a gauge to measure the extent and effectiveness of the general use of group approaches in student personnel services, as a comparative standard for evaluating individual use and effectiveness, and as a guide for determining the desirability for further use. It is further hoped that this initial study will point the way to further studies directed toward the improvement of specific group approach techniques in student personnel services and toward more extensive and effective use thereof. Such further studies will permit more critical analysis and more objective and authoritative evaluation of both specific and general group approach uses.

SUMMARY OF DISSERTATION
SUBMITTED FOR
THE DEGREE OF
DOCTOR OF BUSINESS ADMINISTRATION

THE COMPUTATION OF MANPOWER REQUIREMENTS IN THE MILITARY ESTABLISHMENT

by LEROY HARRIS MANTELL*

In government the need for information on which to base decisions as to alternative plans and programs was stressed by the Hoover Commission in 1949 and formalized by Public Laws 216 and 863, 84th Congress. These enactments require that the Secretary of Defense prepare budgets on a performance basis and that support of budget justifications be presented by information on performance and program costs.

As compared with the existing budget which is a statement of revenue and expenditure in a fiduciary sense, the performance budget presents data on the cost of that which is planned to be done and relates expenditures to past performance. Fiduciary budgets, on the other hand, present requirements and show expenditures in terms of objects to be acquired and things purchased.

The response of the military departments of the Department of Defense has been to propose various forms of "program" budgeting which align expenditures and revenues expected according to management segments or functions such as Pay of Troops, Materiel, Installations, and Training. While these changes have seemed to simplify the appropriation structure there is as yet no indication that performance of service mission has been linked to the justification of the budget. The mere placement of resources used against costs incurred, in a parallel structure, provides no assurance that performance budgeting will evolve unless the resources and their use are related to the purpose for which the agency was created.

One of the reasons why it has not been possible to present budgets on a performance basis is that this kind of formulation requires a manpower-workload measurement system in order to provide the information on which to evaluate statements of requirements. A system is needed to provide information on which to base technological coefficients which are the links that combine functions into systems and provide the mechanism by which systems are combined to produce required outputs.

The military departments have thus far been unable to design a work measurement system which can provide the required information. Systems which have been designed have either lacked acceptance by line

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supervisors and unit commanders, or not provided the essential link between activity measurement and agency-wide objectives.

This dissertation contains a formulation of a new measurement system designed to overcome these deficiencies. It analyzes most of the systems advanced or installed from 1944 to 1958 to determine the causes of failure and to identify desirable characteristics. Then, using the Air Force as an example, it analyzes the types of interrelationships among kinds of work, on the one hand, and between these and kinds of mission activity, on the other, to discover the basis on which measurement units might be developed. It defines kinds of work and their relationship to measures of mission or organizational activity in such a way that measurement products could be used to forecast manpower requirements. The inherent limitations of classical work measurement theory are explored and the need for modification of that theory in the design of an improved system is pointed out in the discussion of standard setting procedure and the role of standards in the estimation of manpower requirements.

A formulation of an integrated measurement system follows which brings together the analysis of kinds of work and the nature of standards. The nature of the work unit account structure, differences in system necessitated by the presence of fixed and variable labor content work units, the measurement of so-called "unmeasurable" work, are discussed. Next, the general characteristics of the system are developed from the point of view of information flow and its relation to the differences in measurement method dictated by the differences in kinds of work. The input-output characteristics of the required standards as well as the distinction among standards measuring mission effectiveness, qualitative and quantitative performance, are then developed. Finally, a workable relationship between activity rates defined as output, and manpower needed to produce activity is demonstrated so that it is possible to translate a forecast of activity into a forecast of manpower requirements. It is then shown that on this basis, the measurement system can be used to support a Performance Budget.

The nature of the changes in budget structure which would be introduced as a result of the recommended conversion, are examined. Improvements in manpower control and the possibility of resuming work on certain mathematical treatments dealing with decision-making, consequent to the adoption of the system, are also discussed.

